Postpartum sexual health in nulliparous women in Ireland: a mixed methods study

Thesis submitted in fulfilment of the requirement for the Degree of Doctor of Philosophy at the University of Dublin Trinity College

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Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

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Summary

Background: Women experience significant changes to their sexual health after the birth of their first baby. Prevalence rates of sexual health problems and associated factors vary greatly in the published literature. The prevalence of and risk factors for postpartum sexual health issues were not known in an Irish setting. Moreover, women's experience of their sexual health after birth in Ireland had not been explored.

Design: A longitudinal mixed methods study.

Aim and objectives: The research aim was to identify the prevalence and experience of sexual health issues in nulliparous women in Ireland antenatally and up to twelve months postpartum. The research objectives for the study were: to identify the prevalence of and risk factors for postpartum sexual health issues and to explore women's experience of sexual health issues and how it affects their lives. This included exploring women's help-seeking behaviour and how their perception of their body image impacted on their experience of their sexual health after birth.

Setting: One large urban maternity hospital setting in Ireland.

Sample: A sample of 1477 women was recruited in early pregnancy. The final sample of 832 women who returned all five surveys (one antenatal and four postpartum) and consented to accessing their hospital records were included in this study (56% response rate). Twenty-one women also took part in a one-to-one interview.

Methods: Site hospital and university ethical approval were granted. This mixed methods explanatory sequential study design with connected integration had an initial quantitative Phase (1) that was followed by a qualitative Phase (2). Women aged eighteen years or older and who were able to read and understand English were recruited to Phase 1 of the study. This involved completing a self-administered survey in early pregnancy and at three, six, nine and twelve months postpartum. The prevalence of postpartum sexual health issues was assessed at each postpartum time point for the three months previous to that time point, using yes/no questions, in the main, but also Likert scales. Outcome data of interest included, for example, data on mode of birth, breastfeeding, dyspareunia, satisfaction with sexual life and body image, timing of resumption of sexual activity after birth, and women's health service-seeking behaviour. Risk factors for postpartum sexual health issues at six and twelve months were assessed using univariate and multivariate logistic regression. From the Phase 1 sample, twenty-one women were invited for interview using a maximum variation sampling to include women who had different modes of birth, varying degrees of perineal trauma and varying levels of satisfaction with their overall sexual lives. A qualitative descriptive study design was utilised. The interview data were analysed using the constant comparative technique.

Findings: Most women had resumed sexual activity three months postpartum (77.5%). Nearly one-third of women experienced dyspareunia before pregnancy; this increased to 53.9% three months postpartum and 37.5% six months postpartum. By twelve months after birth dyspareunia was less than pre-pregnancy prevalence rates (20.5%). A similar pattern was seen in the prevalence of vaginal dryness and problems with orgasm, that is, an immediate postpartum increase in prevalence rates, followed by resolution to less than pre-pregnancy rates twelve months postpartum. Pre-existing dyspareunia (AOR 2.6, CI 95% 1.8-3.6, $p<0.001$), 3rd degree tears (AOR 4.1, CI 95% 1.3-12.3, $p=0.013$) and breastfeeding (AOR 1.9, CI 95% 1.3-2.7, $p<0.001$) were identified as risk factors for experiencing dyspareunia six months postpartum. Twelve months postpartum, being older (>35 years) and experiencing pre-

pregnancy dyspareunia remained predictive of dyspareunia. Women's loss of interest in sex increased from 33% (pre-pregnancy) to 46.8% (three months), 46.3% (six months) and 39.8% (twelve months) postpartum. Loss of interest in sex six months postpartum was associated with pre-existing dyspareunia (AOR 1.4, CI 95% 1.0-1.9, p=0.05), breastfeeding (AOR 2.2, CI 95% 1.6-3.0, p<0.001) and being never satisfied with one's body image (AOR 2.8, CI 95% 1.6-4.6, p<0.001). Twelve months postpartum, breastfeeding (AOR 1.6, CI 95% 1.0-2.4, p=0.029) and being never happy with one's body image (AOR 3.6, CI 95% 1.9-6.7, p<0.001) remained risk factors for experiencing a loss of interest in sex. Despite prevalence rates of postpartum sexual health issues, a high proportion of women were satisfied with overall sexual life, 68% at twelve months after birth.

Six themes emerged about women's experience of their sexual health after the birth of their first baby. Women clearly valued being intimate with their partner; affection (e.g. hugs, kisses and cuddling), sleeping in the same bed and sexual activity were seen as important components of intimacy. Women considered numerous issues when planning to resume sexual activity after birth; this included fear and apprehension associated with the impact their mode of birth or perineal trauma might have on sexual intercourse, where and when the baby slept and their partner's sexual desire. Women identified physical (dyspareunia, breast changes and extreme tiredness) and psychological (being emotionally unavailable to their partner, perception of body image and feelings of guilt) challenges to their intimate relationship after birth. However, women also identified strategies that they and their partner adopted to overcome challenges, such as position changes, use of water-based lubrications and avoiding the breasts during sexual intercourse. Effective communication about the impact of tiredness, being busy, feeling guilty and loss of interest in sex helped women feel understood and less guilty. Time away from the baby and planning sexual intercourse were also strategies that women adopted to remain intimate with their partner. There was strong evidence that healthcare professionals lost several opportunities during the trajectory of antenatal and postnatal care to prepare and advise women about changes to their sexual health after birth. Women did not seek help from healthcare professionals for support and advice regarding their sexual health; rather, they sought help and information from female friends and online.

Conclusion: The findings of this study demonstrate the complex nature of postpartum sexual health. While sexual health issues are commonly experienced after birth, many women remain satisfied with their overall sexual life one year after birth. Pre-existing dyspareunia, breastfeeding and a poor perception of one's body image were risk factors for experiencing postpartum sexual health issues. Women were unprepared for the changes to their intimate relationship but they became positive agents in findings solutions for their sexual health issues. Examining postpartum sexual health from a biophysical perspective only, does not take into account the relational and psychological issues that this study has identified as being important to women with regards to their intimate relationship and sexual health after the birth of their first baby.

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List of abbreviations

CS - caesarean section

El CS - elective caesarean section

Em CS - emergency caesarean section

Episiotomy - a surgical incision of the perineum and the posterior vaginal wall to aid birth

Forceps birth - assisted vaginal birth

GP - General Practitioner

NICE - National Institute for Health and Care Excellence (UK)

OASI - Obstetric Anal Sphincter Injury (3rd and 4th degree tears)

Perineal Trauma - damage to the genitalia during childbirth that occurs spontaneously or intentionally by surgical incision

> 1st degree tear - injury to perineal skin and/or vaginal mucosa (usually unsutured)
>
> 2nd degree tear - injury to the perineum involving perineal muscles but not involving the anal sphincter (usually sutured)
>
> 3rd degree tear - injury to the perineum involving the anal sphincter complex (always sutured)
>
> 4th degree tear - injury to the perineum involving the anal sphincter complex and anorectal mucosa (always sutured)

PHN - Public Health Nurse (community nurse)

SDGs - Sustainable Development Goals

SVB - Spontaneous vaginal birth

UN - United Nations

Vacuum birth - assisted vaginal birth

WHO - World Health Organization

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Chapter 1 Introduction to thesis

1.1 Introduction to topic

Becoming a mother for the first time is a major event in a woman's life. Physical recovery from pregnancy and birth, alongside the social, psychological and emotional challenges women experience adapting to their new roles as mothers are all acknowledged in the growing literature around women's postnatal health (Bick *et al.* 2009, Sacks & Langlois 2016). Issues relating to extreme tiredness, physical recovery and adapting to new roles can last for months and beyond the first year after birth (Schytt *et al.* 2005, O'Reilly *et al.* 2009). A relatively hidden aspect of women's health after the birth of their first baby is their sexual health.

Textbooks on human sexuality and midwifery give scant mention to sexual health during pregnancy, childbirth and postpartum and, when included, discussion is often in the context of resuming sexual intercourse and reasons why women may not be interested in sexual intercourse during the period around pregnancy and after birth (Hyde 1994, Pukall 2014, Macdonald & Johnson 2017). In addition, large scale surveys of women's sexual health address many important aspects such as sexual behaviour and sexual satisfaction, but give little insight into the impact of pregnancy and birth on sexual health (Field *et al.* 2013, Mitchell *et al.* 2013).

The need for healthcare professionals to provide women with accurate, individualised, evidence-based information about potential challenges to sexual health after birth have been emphasised by a number of researchers (Barrett *et al.* 2000, Olsson *et al.* 2005, Woolhouse *et al.* 2014, McDonald *et al.* 2015a). Provision of this type of support at the correct time (i.e. not in the immediate days after birth) and by the right person (i.e. midwives, General Practitioners (GPs), nurses and/or other members of the multidisciplinary team), would likely help women prepare for, and adapt to, changes to their sexual health during pregnancy and after birth. Barriers to providing support to women on issues relating to their sexual health identified by midwives and GPs are a lack of knowledge and confidence in discussing postpartum sexuality (Olsson *et al.* 2011, Wendt *et al.* 2011).

1.2 Background

Little is known in Ireland about women's sexual health after the birth of their first baby, or even about women's sexual health in general. In 2006 a national report described adults'

experience of sex education in Ireland, their first sexual encounter, contraceptive use and same-sex sexual encounters. However, results are somewhat dated as data were collected nearly fifteen years ago (Layte *et al.* 2006). Reports have been published on the sexual behaviours of young adults in Ireland aged 17-18 years (ESRI 2016) and 16-20 years (UNICEF 2011), addressing sex education and risky sexual behaviour. The sexual health of adults aged fifty years or over has also been explored in Ireland (Orr *et al.* 2017). Additionally, a report from the National University of Ireland, Galway (NUIG) examined the sexual health behaviour and attitudes of 1,691 college students aged 18-29 years (Byrnes & MacNeela 2017). Findings indicated that eighty-three percent of women were sexually active (n=954) and half of the women included in the report were satisfied with their sexual life (n=574). Despite the very obvious limitation of the findings not being generalisable to women over twenty-nine years and non-college attendees, this NUIG report provides the only data on women's sexual health in Ireland in the last decade.

While there is an absence of data on women's postpartum sexual health in Ireland, there is however international research that demonstrates that women experience significant sexual health issues in the months after birth (Barrett *et al.* 2000, McDonald *et al.* 2015a). Twenty years of research from predominantly quantitative methods provide conflicting results on the prevalence of sexual health issues after birth (Serati *et al.* 2010). There is also contradicting information as to the risk factors for postpartum sexual health issues (Rathfisch *et al.* 2010, Faisal-Cury *et al.* 2015, Fodstad *et al.* 2016). Furthermore, the impact of the reported postpartum sexual health issues in the literature on women and their intimate relationships, is wanting. The limited qualitative studies available indicate that postpartum sexual health is concerned with: psychological factors (i.e. tiredness, body image and stress) (Olsson *et al.* 2005, Trutnovsky *et al.* 2006), relational factors (i.e. changed desire, changed intimacy, emotional closeness) (Woolhouse *et al.* 2012, Martínez-Martínez *et al.* 2017) and physical factors (i.e. dyspareunia, breastfeeding, changed orgasm and vaginal dryness) (Olsson *et al.* 2005, O'Reilly *et al.* 2009, Martínez-Martínez *et al.* 2017). Research on women's resumption of sexual activity after birth and their experience of sexual activity is lacking. Challenges experienced in relation to being intimate with their partner after the birth of their baby and the strategies women used to overcome intimacy and sexual issues are not seen in the published international or Irish literature.

In Ireland, maternity care is provided jointly by the maternity hospital and GPs through the Mother and Infant Care Scheme. This scheme also includes postnatal care, a baby assessment

at two weeks and a mother and baby assessment at six weeks postpartum with the GP (HSE 2013). The six to eight weeks length of postnatal care is comparable to the UK (NICE 2013), Germany (Grylka-Baeschlin *et al.* 2014), Sweden (Olsson *et al.* 2011) and Australia (McDonald *et al.* 2015a).

1.3 Purpose of thesis

The purpose of this thesis is to explore the topic of sexual health in pregnancy and postpartum; to identify the prevalence of, and risk factors for sexual health issues in nulliparous women in Ireland; to explore women's experience of their intimate relationship and sexual health after birth; and to make recommendations for future practice, policy, education and research.

1.4 Personal journey to the topic and background to interest

My interest in, and passion for women's postpartum sexual health is linked to a number of personal factors; I am a woman, a midwife and a mother, each of which has had an impact on me choosing this topic for research. While I was employed as a Clinical Tutor in Midwifery in Trinity College Dublin in 2010 my colleague, Assistant Professor in Midwifery Dr Deirdre Daly had begun the groundwork for a large longitudinal cohort study on women's health and well-being after the birth of their first baby. The Maternal health And Maternal Morbidity in Ireland (MAMMI) study, the first of its kind in Ireland, began recruiting women in January 2012 (more details are provided in Chapter 3).

I had many conversations with Dr Daly about the purpose of the study, the potential benefits to women in Ireland and how I could become involved. As an experienced midwife I was very aware of the lack of conversation with pregnant and postpartum women about sexuality and sexual health. I expressed my interest in the sexual health aspect of the MAMMI study and began to read around the subject. My early interest in postpartum sexual health culminated in three journal publications (O'Malley 2012, O'Malley & Smith 2013a, 2013b).

In 2012, I became actively involved in the MAMMI study, and assisted with recruiting pregnant women to the study. The overwhelmingly positive response from women motivated me to explore how I could become more involved in the study and carry out research into women's sexual health after birth. In September 2012 I registered as a part-time PhD student in Trinity

College Dublin. During the academic year 2012-2013 I recruited women to the MAMMI study, developed retention strategies for postnatal follow-up and began the process of planning a PhD study on women's sexual health after the birth of their first baby. In 2013, I was successfully awarded a HRB Research Training Fellowship for Healthcare Professionals to undertake my study. This enabled me to focus exclusively on my research and has led to this PhD thesis.

1.5 Format of thesis

This thesis is organised across seven chapters. In Chapter two the broader topics of sexuality, sexual health and reproductive health are explored as these areas were deemed of interest and essential in providing context to the literature on women's sexual health. This is followed by a review of the literature on postpartum sexual health. The findings of a concept analysis of postpartum sexual health are also presented in this chapter.

Chapter three outlines the methodological and philosophical issues that were considered when planning and conducting this research. It provides a clear background for the methodological underpinnings of the study, exploring the pragmatic mixed methods approach that was chosen to fulfil the research objectives. Methods specific to the quantitative and qualitative aspects of this study are also discussed, including the approach to sampling, the procedures for data collection and data analysis, and the steps taken to heighten the quality of the research. The ethical considerations associated with this research are also discussed.

Chapters four and five present the findings of this study. In Chapter four the findings from five surveys (one antenatal and four postnatal at three, six, nine and twelve months) of 832 women reporting on the prevalence of and risks factors for sexual health issues, in addition to study sample characteristics, are presented. Chapter five details the findings from twenty-one interviews of women's experience of their sexual health after the birth of their first baby. Women's help-seeking behaviour in relation to their intimacy and sexual activity needs is also presented.

Chapter six summarises the key findings and how they emerged from the integration of findings from the quantitative and qualitative phases. These are the foundation for the discussion with reference to the existing body of knowledge. The discussion focuses on the

seeming contradiction that women remain satisfied with their sexual life while also experiencing sexual health issues. The view of women as positive agents in seeking help and developing strategies to overcome, and solve, sexual health issues experienced is discussed. Additionally, the ways in which healthcare professionals' lack of enquiry on issues relating to sexual health perpetuate the silence around women's postpartum sexual health and sexual health in general in Ireland are discussed. This chapter also identifies the strengths and limitations of the study.

Chapter seven, the concluding chapter of the thesis, presents recommendations for: practice, future sexual health policy, health professionals' education and future research, as a result of the findings.

Chapter 2 Review of the literature

2.1 Introduction

This chapter presents a review of the literature which provides context and rationale for the study of women's postpartum sexual health. To understand the complexity of postpartum sexual health, consideration is given to the historical and social constructs of sexuality, sexual health and reproductive health as distinct concepts relating to both men and women. The prevailing commentary of women's sexual health from an illness and dysfunction viewpoint is explored. Following this, prevalence rates for sexual health issues postpartum and a review of the evidence from qualitative studies are presented. The conduct and results of a concept analysis of postpartum sexual health are also described in this chapter as it was deemed essential in order to gain a thorough understanding of postpartum sexual health and its conceptual boundaries.

2.2 Sexuality, sexual health and reproductive health

2.2.1 Sexuality

Sexuality, or what constitutes as 'normal' sexuality, through the ages has traditionally been defined by religion, that is, what is acceptable and unacceptable sexuality. The Judeo-Christian message was that, unless for procreation purposes, sex is a dangerous force and sexual desire a sin to be punished in the afterlife. It was against this backdrop that scientific understanding of the psychological aspects of sexuality began in the late 19th century, although religion continues to influence our ideas about sexuality to the present day. Early researchers (Sigmund Freud and Havelock Ellis) emerged from the Victorian era when sexual norms were extremely rigid and heterosexuality was at the core of 'normal' sexual behaviour with a focus on biology and function (i.e. procreation) (Houlbrook & Cocks 2006).

Havelock Ellis (1859 – 1922) wrote seven volumes collectively entitled *Studies of the Psychology of Sex* in which he discussed his sexual research. He concluded that sexual behaviour is determined by social and cultural context and that if humans were left to their own desires, they would display a range of sexual behaviours, many of which should be considered normal (e.g. masturbation, homosexuality). He viewed women as sexual beings with their own desires and orgasms. Ellis is now considered quite visionary, his tolerant and objective perspectives that 'sexual deviations' of the time were harmless and he urged society

to accept them. Sigmund Freud's (1856 – 1939) psychoanalytic theories[1] on sexuality pathologised adults, in particular women. Freud assumed that woman's biology was inferior to the man because she lacked a penis; furthermore, he believed that female sexuality was inherently passive, as opposed to the active aggressiveness of the male. While there are numerous criticisms of Freud's views of women's sexuality and his overestimation of the influence of sex on the stages of human development, he did however manage to rise out of the Victorian era and teach that sex is an important part of the person and made the conversation and study of sex acceptable in medicine and society.

The oldest survey research available is that of Alfred Kinsey (1894 – 1956), commonly known as the Kinsey Reports (Kinsey *et al.* 1948, 1953). Kinsey analysed interview data from over 11,000 white men and women for the frequency with which they participated in various types of sexual activity and looked at how factors such as age, socio-economic status and religious adherence influenced sexual behaviour. His findings were immediately controversial among the general public causing shock and outrage, both because they challenged conventional beliefs about sexuality and discussed subjects that had previously been taboo (e.g. sexual orientation). His research is cited as having paved the way for a deeper exploration into sexuality among sexologists and the general public, as well as liberating female sexuality. Kinsey's work disputed the notions that women generally are not sexual and that orgasms experienced vaginally are superior to clitoral orgasms as Freud had suggested. Kinsey's work has been criticised due to the lack of representativeness of the sample (i.e. overrepresentation of homosexual men, prisoners and prostitutes) and for his observation of and participation in sexual activities, sometimes with co-workers. The early 1990s saw sexuality surveys carried out with random sampling methodology allowing results to be more generalisable. The 1990 Sexual Behaviour in Britain: The National Survey of Sexual Attitudes and Lifestyles (Natsals -1) (Wellings *et al.* 1994) and the National Health and Social Life Survey (NHSL) in the United States (US) (Laumann *et al.* 1994) were large scale studies examining the sexual behaviours of adults. Both studies suggested that adults engaged in a range of sexual activities (i.e. vaginal sex, anal sex, oral sex, mutual and self-masturbation), although, less frequently than previously

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[1] The basic assumption of Freud's psychoanalytic theory is that part of the human personality is unconscious. He introduced the term 'libido' for sex drive and saw it as one of the major unconscious forces motivating human behaviour. Freud theorised that psychological dysfunction in adults was a problem that emerged from interruption of the five stages of sexual development in children.

suggested by the Kinsey Reports. Nonetheless, respondents were for the most part satisfied with their sexual lives.

Inspired by Kinsey's work, Masters and Johnson (Masters & Johnson 1966) carried out an observational study measuring the physiological responses that occur in men and women during sexual intercourse and masturbation. Their views on 'normal' sexual behaviour are discussed and critiqued in 2.3.1. Up to this point in time research and discourse on sexuality are focused exclusively on sexual behaviour and physiology. Sociologists on the other hand were interested in the ways in which society or culture shape sexuality. Three basic assumptions underlie the sociological approach to the study of sexuality:

i. Every society regulates the sexuality of its members in some ways.
ii. Basic institutions of society (i.e. religion) affect the rules governing sexuality.
iii. The appropriateness or inappropriateness of a particular sexual behaviour depends on the culture in which it occurs.

The outcome of all these social influences is that each of us learns a 'sexual script' (DeLamater 1987). The idea being that sexual behaviour is scripted, that is, we have learned an elaborate script that tells us who, when, where and what we do sexually. A sexual script which focuses on sex between opposite genders (heterosexual script) where sexual encounters must result in orgasm and in which women do not initiate sexual relationships, assert their needs and desires and are not knowledgeable about sex, exists (Greene & Faulkner 2005, Curtin *et al.* 2011). Feminists argue that models of sexuality used today are 'narrow, constricting, heterosexual, phallocentric and procreative' (Kaschak & Tiefer 2001, p. 124), with women's sexuality expressed in terms of (perceived) male sexual norms and relevant only in the context of reproduction rather than sexual pleasure (Eliason 2014).

2.2.1.1 Concept of sexuality

Sexuality has been described as a multifaceted phenomenon that can be influenced by contextual factors such as stress or relational factors (Hipp *et al.* 2012). Others have identified sexuality as being essential to health and contributing to quality of life, personal development and well-being (Wendt *et al.* 2011). Sexuality is said to be complex; ranging from how one thinks about oneself as a sexual being (Woolhouse *et al.* 2012), to being viewed as an integral part of the personality of every human being (Pastore *et al.* 2007). Alternatively, Salim (2010) states that sexuality is a combination of biological, psychological, cultural and social factors, without actually defining these terms. Others described sexuality as more behavioural, for

example, the urge for or interest in engaging in sexual behaviour (Nezhad 2011). Eliason (2014, p. 163) in a paper bemoaning the lack of consistency in use of terminology and meaning when addressing issues relating to sexuality puts forward the following definition of sexuality as 'a set of attitudes, emotions, knowledge, skills and identities related to reproduction, physical intimacy, desire relationships and arousal of the genitals'.

At the World Meeting of Experts on Sex Education in 2011 an expert group used the following definition of sexuality; 'the way in which people experience and express themselves as sexual beings. It is the result of the interplay between biological, psychological, socioeconomic, cultural, ethical, and religious/spiritual factors. Based on sex, it includes: gender, sexual and gender identities, sexual orientation, eroticism, emotional attachment and love, and reproduction' in their discussions and recommendations on sexuality education (Hurtado Murillo *et al.* 2012, p. 14). It is the World Health Organization (WHO) definition, however, that is most commonly referred to in the literature, a definition that was revised in 2002 and 2006 to add the notion of pleasure to the original 1975 definition. The WHO (2006) defines sexuality as follows:

'a central aspect of being human throughout life encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors' (p 5).

This definition draws attention to a number of issues: sexual identity, sexual behaviours, sexual desire, sexual pleasure, reproduction, and the role of physiology, psychology and society in influencing sexuality. This definition points to the very individual nature of sexuality.

2.2.2 Sexual and reproductive health

The concept of sexual health is interwoven with that of sexuality and in advance of a discussion on postpartum sexual health, the notion of sexual health and reproductive health must first be addressed. I introduce reproductive health at this point as the concept, while closely related to sexual health, is seen as a distinct component of sexual health which requires individual attention because of a different focus. Sexual health is defined as follows:

'a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to

sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled' (WHO 2006, p. 5). Key concepts in this definition include sexual pleasure; control over sexual behaviour; freedom from fear, abuse and discrimination; empowering relationships; freedom from disease and dysfunction; and sex as a positive and enriching force in one's life. Edwards & Coleman (2004) point out that the discussion on defining sexual health is ongoing and likely to continue to reflect current social forces as it has done in the past. Furthermore, many concepts included in this definition have been included in previous definitions, as far back as 1975, and while the discussion on sexual health has matured Edwards & Coleman (2004) suggest that it is worth questioning whether the understanding of included concepts has matured alongside it.

The linkage between sexual health and reproductive health has been in existence for over twenty years and the debate on whether sexual health is a subset of reproductive health or *vice versa* has been a source of continued dispute. Lottes (2000) argues that the focus in reproductive health is more on medical problems related to pregnancy, reproductive rights and childbearing; whereas, sexual health covers broader issues such as sexual knowledge, self-acceptance, identity, personal enjoyment and partner communication. The WHO in an effort to address this interwoven connectivity between sexual health and reproductive health published a framework that operationalises the above definition of sexual health to ensure that it receives full attention in research and policy development alongside reproductive health (WHO 2017). The framework outlines four sexual health interventions: sexual function and psychosexual counselling; preventing and control of HIV and other transmissible infections; gender-based violence prevention, support and care; and comprehensive education and information (Figure 2.1 - blue ribbon) and four reproductive health interventions: antenatal, intrapartum and postnatal care; contraception counselling and provision; fertility care; and safe abortion care (Figure 2.1 - orange ribbon) that are incorporated into the inextricably linked and equally weighted six guiding principles of the framework. Each intervention area enhances the impact of the other and as a result is said to strengthen the attainment of sexual health as a whole (Figure 2.1). For example, provision of sexual health education and support to women antenatally and postpartum (orange ribbon) could identify women with previous undisclosed sexual health problems and direct them to an appropriate care pathway, such as counselling or physiotherapy (blue ribbon). This framework is not directed specifically at women but is inclusive of male sexual and reproductive health.

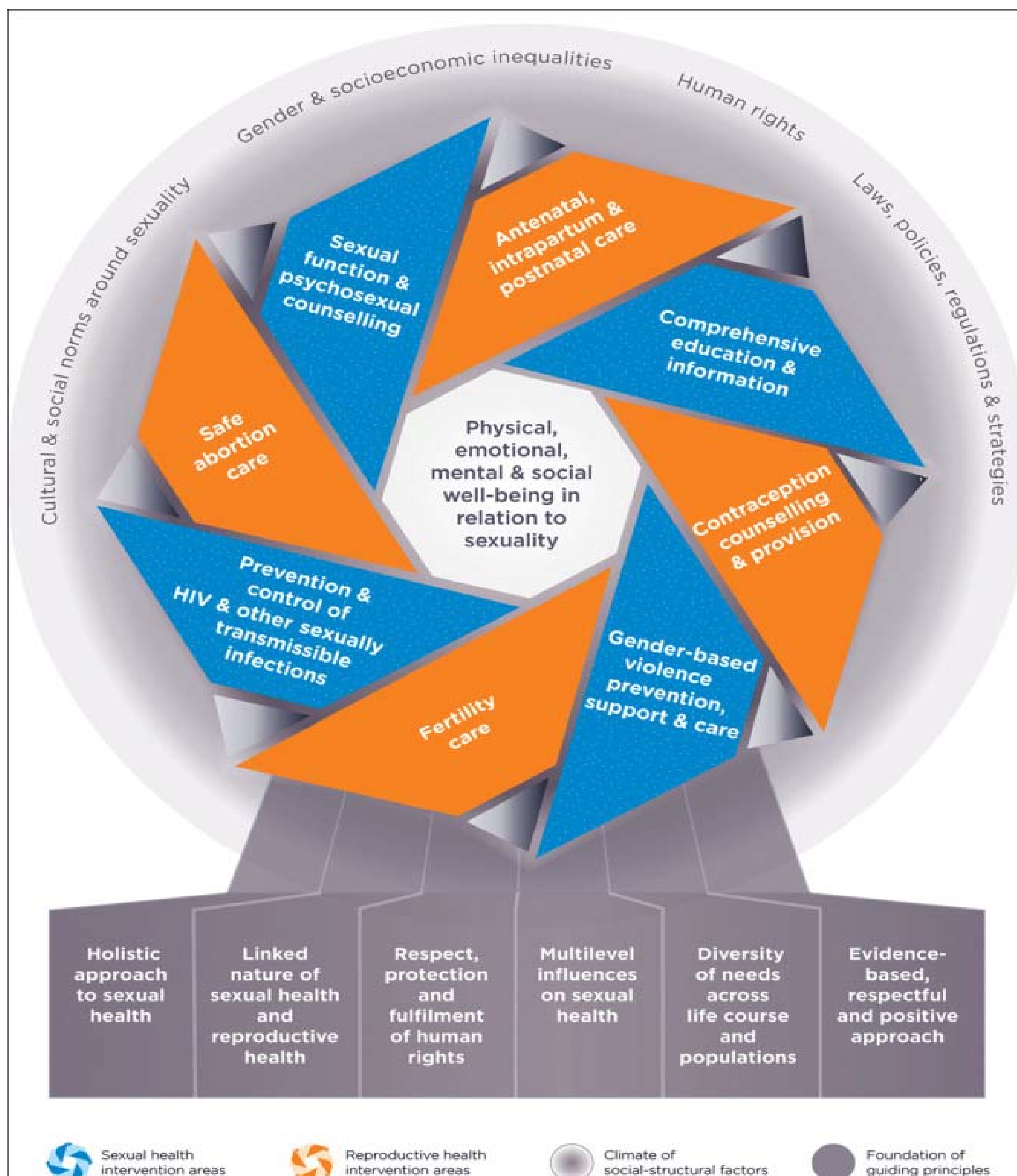

Figure 2.1 Framework for operationalising sexual health and its linkages to reproductive health (WHO 2017, p. 5)

2.2.3 Sexual rights

There is a growing consensus that sexual health cannot be achieved and maintained without respect for, and protection of, certain human rights. Human rights refer to every person's freedoms and entitlements to live in dignity. States assume obligations and duties under international law to:

Respect – States must refrain from interfering with or curtailing the enjoyment of human rights.

Protect – requires States to protect individuals and groups against human rights abuses.

Fulfil – States must take positive action to facilitate the enjoyment of basic human rights.

Under international human rights law all persons have the right to control and decide freely on matters related to their sexuality; be free from violence, coercion or intimidation in their sexual lives; have access to sexual and reproductive healthcare information, education and services; and be protected from discrimination based on the exercise of their sexuality. These are known as human rights related to sexuality, or simply, sexual rights, and the government of every country in the world is required to respect, protect and fulfil these basic human rights (Sexual Rights Initiative 2018).

Gender-based violence[2], rights of the lesbian, gay, bisexual, transgender and intersex (LGBTI) people, the rights of sex workers, access to sex education, access to reproductive services, sexual violence in conflict situations and sexual needs of refugees and asylum seekers are all major sexual rights issues that continue to require global attention. There is an absence of sexual rights in the United Nations (UN) Sustainable Development Goals (SDGs) developed in 2015; however, the greater prominence of sexual and reproductive health in the health goal (Goal 3) and gender equality goal (Goal 5) do demonstrate some progress (UN 2015b). Conservative UN member states have been seen to slow down the progress towards universal consensus on sexual rights. Their opposition often centres on two key issues: the rights of people of diverse sexual orientations and gender identities; and the rights of adolescents, particularly girls, to control their own bodies, sexualities and ultimately their lives (Ali *et al.* 2015). The WHO, the UN and the Human Rights Council continue to lobby for resolutions on sexual health rights (UN 2015a, WHO 2015) putting pressure on member states to recognise, respect and fulfil the human rights of all individuals regardless of sexual orientation and gender identity, disability, race, sex and age (Heidari 2015).

[2] Gender-based violence is the general term used to capture violence that occurs as a result of the normative role expectations associated with each gender, along with the unequal power relationships between the two genders. It is widely acknowledged that the majority of persons affected by gender-based violence are women and girls, as a result of unequal distribution of power in society between women and men.

Sexual rights in Ireland is very topical at time of writing, as the Irish government has confirmed its intention to hold a referendum on Article 40.3.3, known as the Eighth Amendment, on the 25th of May this year[3]. The amendment in its current state equates the life of a pregnant woman with that of an embryo or foetus; 'the states acknowledges the right to life of the unborn and, with due regard to the equal right to life of the mother, guarantees in its laws to respect, and as far as practicable, by its laws to defend and vindicate that right.' At present abortion is only available in Ireland when the life of the woman is in imminent danger. Access to safe abortion is a recognised human and sexual right and Ireland has been repeatedly taken to task by international human rights bodies and courts for its failure to decriminalise abortion and to change highly restrictive laws. The UN Human Rights Committee found that Ireland's abortion laws were 'cruel, inhuman and degrading' on two separate occasions (Gentleman 2016, Cullen 2017).

Gender-based violence and sexual violence are an ever-present sexual right concern for women and men living in Ireland. A large European-wide survey on violence against women (n=42,000, of whom approximately 1,500 lived in Ireland) demonstrated that one in three women living in Europe (33%) has experienced physical and/or sexual violence and one in twenty women (5%) has been raped. The Irish data indicated that 8% of women surveyed experienced some form of sexual violence, this is less than the 11% who reported experiencing some form of sexual violence in the whole study population (European Union Agency for Fundamental Rights 2014). The Sexual Abuse and Violence in Ireland (SAVI) report, although more dated, demonstrates a much higher prevalence of sexual violence in Ireland; this survey was undertaken with women and men (n= 3,118); 42% of women and 28% of men experienced some form of sexual abuse or assault in their lifetime (McGee *et al.* 2002). One could question whether issues relating to gender-based violence and sexual violence are linked to the outdated sex education in Ireland. The Relationship and Sex Education (RSE) programme in Irish schools is over twenty years old. An analysis of the curriculum content conducted in 2006 noted that it focuses largely on the avoidance of pregnancy and sexually transmitted infections (STIs), and encourages students to wait for sex 'until the time is right' (Layte *et al.* 2006, Rundle

[3] The people of Ireland voted to repeal the Eighth Amendment; 66.4% voted in favour and 33.6% voted against. The overwhelming majority in favour of repealing the Eight Amendment marks a positive step which will enable women in Ireland to make decisions and control their own reproductive and sexual health. The Irish government estimate that changes to legislation to permit abortion will be place in January 2019.

et al. 2008). A further evaluation in 2007 also revealed that there was a strong perception amongst 187 students in Ireland that RSE was selectively addressed and sometimes even ignored (Mayock *et al.* 2007). This study also found a lower implementation of the programme in all-boys' schools potentially reinforcing harmful gender stereotypes where girls are the gatekeepers of sex, underpinned by an assumption that boys will push to go as far as they can. A lack of knowledge on: sexual desire, sexual pleasure, intimacy, consent, sexual rejection, fear of inadequacy, sex and alcohol, sex and drugs, sexual identity, gender identity, preparing young people for adult relationships, recognising inappropriate sexual behaviour and information on services available when inappropriate behaviour has been experienced could all conspire to create a climate of sexism, sexual misconduct, harassment and sexual violence. Gaps in Ireland's sexual and reproductive health education system have been identified by the Irish Human Rights and Equality Commission (IHREC), with the UN Committee on the Rights of the Child and the UN Committee on the Elimination of Discrimination against Women making recommendations that Ireland improve sexual and reproductive health education (Irish Human Rights and Equality Commission 2017).

Clearly, addressing sexual rights in Ireland is an ongoing issue; nevertheless, Ireland was also the first country to legalise same-sex marriage in 2015. Transgender people's rights also gained recognition in Ireland when, in 2015, a law was introduced allowing people to choose their legal gender without the need for medical certificate. Whilst some elements of Irish law and policy are leading the world in making positive change for sexual rights, there also remain elements that are a throwback to darker ages where women do not have control over their own reproductive health.

2.3 Women's sexual health

The above sections discussing sexuality, sexual and reproductive health refer to both men and women. Much of the discourse from policy-makers on women's sexual health is concerned with pathophysiology (STIs and HIV), crisis pregnancy, adolescent sexual health, sexual health of the older woman and sexual dysfunction. It is not the aim of this PhD thesis to address the health burden of STIs, crisis pregnancy and sexual violence against women, nor is it within the confines of this research to address adolescent and older women's sexual health. Yet, sexual dysfunction is considered to be a key element of any discussion on women's sexual health. As much of the published research on women's sexual health (when STIs, HIV, crisis pregnancy and gender-based violence have been removed) frame sexual health from a problem

perspective rather than a health perspective. A further observation of the available literature on women's sexual health is that the majority situate their research in a male model of sexual response. The following section will critique some of the most commonly used sexual response cycle models seen in the literature. It was deemed essential to include this discussion as it gives context to the medicalised and dysfunction lens from which women's sexual health is viewed.

2.3.1 Models of sexual response cycle

The sexual response cycle, in simple terms, refers to the pattern of physiologic events that occur during sexual arousal and intercourse. It was first described by Masters & Johnson (1966) who suggested that the human sexual response cycle follows a linear model progressing through four phases: excitement, plateau, orgasm and resolution (Figure 2.2), all of which must occur for the sexual response cycle to be complete. This model was subsequently expanded by Kaplan (1979) to include an initial sexual desire phase. They argued that the sexual response cycle was fundamentally identical in men and women. This model lacks important components that are necessary for understanding female sexual response: such as, sexual desire, sexual motivation, emotional intimacy and relational dynamics. Additionally, Masters and Johnson's model implies that 'normal' sexual desire is spontaneous, thereby suggesting that if women do not experience spontaneous sexual desire, then they are dysfunctional.

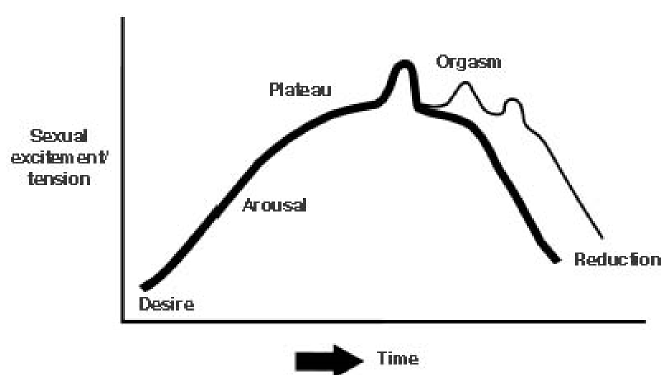

Figure 2.2 Masters and Johnson Sexual Response Cycle (1966) (Basson 2000, p. 60)

Despite its (even current) wide use, a number of concerns have been identified by women and feminist critics about its suitability for application to women. They argue that there is a dearth

of empirical evidence supporting this type of linear model in women (Kaschak & Tiefer 2001, Tiefer 2001), and highlight that motivation for engaging in sex is ignored (Hayes 2011). They also comment on how it ignores sexual desire completely and requires an orgasm to have occurred during the sexual response (Ramage 2004). The primacy of vaginal orgasm in Masters and Johnson's physiologic model has led to clinical and societal misunderstandings about female sexuality, resulting in a tendency to label women who do not achieve vaginal orgasm during sexual intercourse as having a sexual dysfunction.

A further reason to dispute the legitimacy of using this linear model for women includes the argument that not all women are physiologically identical. Incorporated in this argument is: women have reported experiencing at least two different orgasms - clitoral and vaginal (Jannini *et al.* 2012). If two types of orgasm are reported then it is most likely that two different neurovascular pathways also exist (O'Connell *et al.* 2005, O'Connell & DeLancey 2005). Some women experience both types of orgasm while others report experiencing one type only, or none; hence, diminishing the assumption that all women are the same. Furthermore it is reasonable to question whether orgasm is essential to sexual pleasure. This question brings me back to the 'sexual script' that has been thrust upon women for centuries; whereby sexual satisfaction is only achieved through orgasm. There is an abundance of evidence supporting the argument that women's experience of sexual satisfaction is more relationship-orientated (Petersen & Hyde 2011, Bellamy *et al.* 2013, Fallis *et al.* 2016), and that women's sexual response stems from intimacy needs rather than a need for physical genital arousal (Tiefer 1995/2004, Nicolson & Burr 2003, McHugh 2006, Tiefer 2010b, Træen 2010, McBride *et al.* 2017).

Alternative models highlight other perspectives on female sexual response, for example, an intimacy-based circular model was described by Basson (2000). This model redefined the phases of female sexual response and their relationship with one another. The model suggests that for many women in relationships, spontaneous sexual desire may be uncommon and that many are in a state of 'sexual neutrality' in their relationship (Basson 2000, p. 53). With the experience of emotional intimacy, however, women may be receptive to sexual activity and may consequently experience arousal and desire, which can in turn lead to further desire for subjective and physiological sexual arousal, orgasm and feelings of emotional intimacy (Figure 2.3). In this model, subjective aspects of sexual arousal are emphasised in addition to physiological (genital and non-genital) responses (Basson 2001, 2002, 2004). Nevertheless, research directly comparing linear and circular models of sexual response has shown that

women indicated that the circular model was a poor fit for their own sexual response, with women likely to endorse either model (Sand & Fisher 2007) or indicate the linear model best represented their sexual response (Giles & McCabe 2009). These results could be explained by significant study limitations: for example, close to 40% of women in each study were diagnosed as having a sexual dysfunction based on the Female Sexual Function Inventory (FSFI) (an instrument designed to assess the key dimensions of sexual function in women), which itself is based on the linear sexual response model (Hayes 2011). Also, the 'sexual script' of good sex equals orgasm could have influenced scoring using the FSFI, insomuch as women are considered dysfunctional if they do not experience sexual desire and achieve an orgasm during sexual intercourse.

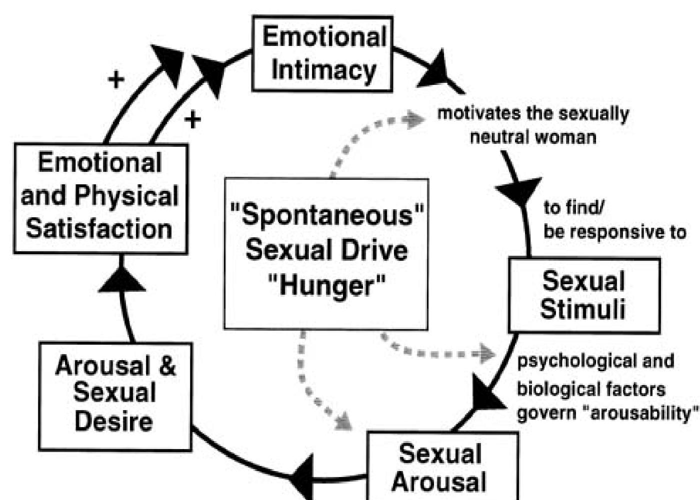

Figure 2.3 An intimacy-based model of female sexual response (Basson 2001, p. 351)

2.3.2 Women's sexual health problems

To address women's sexual health it is essential that women's sexual health problems are considered in this thesis. Female sexual health is repeatedly viewed from the 'problem' or 'dysfunction' lens. The Diagnostic and Statistical Manual of Mental Disorders (DSM), the authoritative guide to diagnosing sexual health disorders, and used by health professionals worldwide, is the main source for classification of female sexual dysfunction. In 2013 the DSM-5 revised their classification for female sexual dysfunction from five to three disorders (Table 2.1) (American Psychiatric Association 2013). One fundamental change was that male and female diagnostic categories are no longer parallel in DSM-5 and relatedly, the diagnostic categories are no longer underpinned by Masters and Johnson's sexual response cycle. This is

evidenced by the definition of sexual dysfunctions used in the DSM-5 which is 'a group of disorders that are typically characterised by a clinically significant disturbance in a person's ability to respond sexually or to experience sexual pleasure' (American Psychiatric Association 2013, p. 423).

Table 2.1 Changes in classifications in DSM-5

DSM-4	DSM-5
Female hypoactive desire disorder Female arousal disorder	Female sexual interest/arousal disorder
Female orgasmic disorder	Female orgasmic disorder
Dyspareunia Vaginismus	Genito-pelvic pain/penetration disorder

Female sexual interest/arousal disorder includes (i) absent /reduced interest in sexual activity; (ii) absent/reduced sexual/erotic thoughts or fantasies; (iii) no/reduced initiation of sexual activity and typically unresponsive to a partner's attempt to initiate; (iv) absent/reduced sexual excitement/pleasure during sexual activity on almost all or all sexual encounters; (v) absent/reduced sexual interest in response to any internal or external sexual erotic cues (written, verbal, visual); and (vi) absent/reduced genital or non-genital sensations during sexual activity on almost all or all sexual encounters. Female orgasmic disorder refers to difficulty or inability to reach orgasm with sexual stimulation. Genito-pelvic pain/penetration disorder refers to difficulty having intercourse and feeling significant pain upon penetration. It includes (i) intense fear/anxiety in anticipation of, during, or as a result of vaginal intercourse; (ii) actual pain experienced in the pelvis or vulvovaginal area during attempted, or as a result of, vaginal penetration; and (iii) marked tensing or tightening of the lower pelvic/inner-abdominal muscles during attempted vaginal penetration.

Unlike its predecessors, the DSM-5 includes the requirement of experiencing the disorder 75%-100% of the time to make a diagnosis of sexual disorder in each case. There is also a requirement of six months (approx.) minimum duration for a diagnosis to be made and the disorder must be deemed to have caused 'clinically significant distress in the individual'. A new group of criteria called 'associated features' has also been introduced in the DSM-5 (American Psychiatric Association 2013). Table 2.2 describes these features and provides possible examples.

Table 2.2 Associated features to consider when diagnosing a sexual dysfunction

Partner factors	Relationship factors	Individual vulnerability factors	Cultural and religious factors	Medical factors
Partner sexual problem Partner health status	Poor communication Discrepancies in desire for sexual activity	Poor body image History of sexual or emotional abuse Psychiatric comorbidity (depression, anxiety) Stressors (job loss, bereavement)	Inhibitions related to prohibitions against sexual activity or pleasure Attitudes towards sexuality	Any medical factors that might be relevant to prognosis, course of treatment

The revised classifications of female sexual dysfunctions attempt to address the longstanding critiques of the DSM for using Masters and Johnson's sexual health response cycle as the framework for classifying sexual disorders (Tiefer 2001) and the assumption that women's sexual problems should be conceptualised in a similar way to men's (McHugh 2006, Tiefer 2010a). The identification of associated features appears to be an attempt to introduce a more biopsychosocial approach to diagnosis with emphasis on the subjective and relational aspect of women's sexual experience. The introduction of a minimum duration of six months is seen as an attempt to avoid pathologising normal variations in women's experiences of desire and interest (Graham 2016).

Critiques of the changes in classifying female sexual disorders chiefly concern the deletion of female hypoactive desire disorder and female arousal disorder and the introduction of female sexual interest/arousal disorder. They argue that the bar is being raised for diagnoses of female sexual dysfunction (Balon & Clayton 2014). Feminist scholars in particular expressed concern about the inclusion of responsiveness as a criterion for the diagnosis. In their view this emphasises the notion of 'feminine receptivity' and is comparable to the notion that women be receptive to their partner's sexual desire and advances (Angel 2013, Spurgas 2013).

2.4 Postpartum sexual health[4]

The postpartum period has traditionally been defined as the first 6-8 weeks after the birth of a baby (NICE 2013). Romano *et al.* (2010) argue for an extended postpartum period, suggesting

[4] A detailed search strategy for the literature used in this chapter is presented in Appendix 1.

that there are three phases to this time period. These are the initial or acute phase involving the first 6-12 hours after birth, the second phase or subacute phase lasting from 2-6 weeks and the third phase is the delayed postpartum period which can last up to six months. Change during this third postpartum period is gradual and involves issues such as restoration of muscle tone and connective tissue, and major adaptation to new roles, with emotional and social changes that potentially alter the relationship between a couple. Literature and international policy on contraception refer to an 'extended' postpartum period, commonly defined as twelve months after birth (Ross & Winfrey 2001, WHO 2013, Mengesha *et al.* 2015). Yet some of the published research on women's postpartum health extends beyond twelve months in evaluating women's health, for example, up to eighteen months after birth, while still being referred to as 'postpartum' (Bick & MacArthur 1995, Glazener *et al.* 1995, Brown *et al.* 2006). Regularly a rationale for the chosen timeframe is not given, but an assumption is made that it is to identify short term, transitory and persistent changes in women's health that resulted from or began since pregnancy and birth.

The most common timeframe used in studies on postpartum sexual health is three months (Labrecque *et al.* 2000, Rogers *et al.* 2009, Rathfisch *et al.* 2010, Marsh *et al.* 2011, McDonald *et al.* 2015a), which is an advantageous timeframe to use as the majority of women (86%) will have resumed some form of sexual activity by this time (McDonald & Brown 2013). There are several potential disadvantages to a three-month timeframe: sexual activity and sexual intercourse may 'only just' have been resumed with little or no time allowed to adapt to any changes. Women's perception of their body image may be negative as 'baby weight' often persists well beyond three months and adaptation to parenting roles may be in the early stages with anxiety about baby's well-being heightened in these first few months for new parents. Use of a six-month (Trutnovsky *et al.* 2006, Baksu *et al.* 2007, Pauls *et al.* 2008) or twelve-month timeframe (Williams *et al.* 2007, Bertozzi *et al.* 2010, Bertozzi *et al.* 2011) could eliminate some of these potential drawbacks. The more questionable times for examining postpartum sexual health reported are three days (Chang *et al.* 2010), fourteen days (Connolly *et al.* 2005) and six years (Baud *et al.* 2011). The very early timeframes give women little or no time to adapt to being a parent or to physically and emotionally recover from the birth. The longer timeframes do not allow for the potential influence of other factors; such as additional births, general health issues, relationship breakdown and financial issues, thus making findings more difficult to interpret.

2.4.1 Prevalence of postpartum sexual health problems

As the majority of research into women's postpartum sexual health is framed within a dysfunction or problem position, I have used the DSM-5 classification system for female sexual dysfunction to provide structure to the following section which further explores the literature on postpartum sexual health.

2.4.1.1 Female sexual interest/arousal disorder

This section is concerned with the impact of pregnancy and birth on female sexual interest and arousal. As seen in Section 2.3.2 female sexual interest and arousal is complex, and incorporates many issues related to sexual desire, such as behavioural, subjective and physical issues. Sexual interest appears to be synonymous with sexual desire, while sexual arousal appears to be more concerned with physiological and emotional changes that occur in the build up to or during sexual activity. One can occur in the absence of the other, or both can occur together. In the studies sourced the terms sexual interest, sexual desire and libido were all used in an effort to describe women's interest in sexual activity. For the purposes of discussion, findings relating to the impact of pregnancy and birth on sexual desire and arousal are separated and presented here.

Sexual desire

Sexual desire has been defined as a motivational state and an interest in sexual objects or activities, or as a wish, need or drive to seek out sexual objects or to engage in sexual activities (Rosen *et al.* 2017a). New mothers consistently report lower sexual desire in the first year postpartum compared to pre-pregnancy levels (Barrett *et al.* 2000, Serati *et al.* 2010, Khajehei *et al.* 2015, McDonald *et al.* 2015a, Yıldız 2015, Rosen *et al.* 2017a). Prevalence of reduced sexual desire postpartum varies greatly, ranging from: 34%-61% at three months (Rathfisch *et al.* 2010, McDonald *et al.* 2015a), 37%-60% at six months (Barrett *et al.* 2000, McDonald *et al.* 2015a) and 51%-63% at twelve months (McDonald *et al.* 2015a, Fodstad *et al.* 2016). The most frequent finding is that the reduction in sexual desire experienced during pregnancy had not returned to pre-pregnancy levels at six months postpartum (Pauls *et al.* 2008, Yıldız 2015). An improvement in sexual desire is observed as postpartum time elapses from three to six months (Barrett *et al.* 2000, McDonald *et al.* 2015a) and six to twelve months postpartum (Serati *et al.* 2008, Lurie *et al.* 2013, McDonald *et al.* 2015a), although this is not always obvious from the conflicting prevalence rates seen in the literature. Nevertheless, while improvement in sexual

desire is observed as time passes postpartum, levels of sexual desire do not return to pre-pregnancy measures (Klein *et al.* 2009, Rogers *et al.* 2009, Safarinejad *et al.* 2009, Acele & Karaçam 2012, Faisal-Cury *et al.* 2015, McDonald *et al.* 2015a). Small sample sizes (Pauls *et al.* 2008, Rathfisch *et al.* 2010, Yıldız 2015), retrospective study designs (Khajehei *et al.* 2015), undefined postpartum timeframes (Faisal-Cury *et al.* 2015, Khajehei *et al.* 2015) and an over-reliance on measurement tools that evolved from linear sexual response cycles and dated classifications of female sexual dysfunction (Serati *et al.* 2008, Faisal-Cury *et al.* 2015, Khajehei *et al.* 2015, Yıldız 2015) make interpretations on the impact of pregnancy and birth on sexual desire difficult to establish. The use of dated classifications of female sexual dysfunction is likely to increase the reported prevalence of sexual desire disorders. Nonetheless, what can be said is that a decrease in sexual desire can be expected. It is noteworthy that none of the studies assessed whether the change in sexual desire caused distress for women. In research with women who were not pregnant or postpartum low sexual desire did not always cause them distress or concern when asked (King *et al.* 2007, Witting *et al.* 2008b).

Sexual arousal

Sexual arousal refers to the physiological response to sexual desire which is increased blood flow to the vaginal walls (enabling lubrication). The external genitalia (including the clitoris, vaginal opening, and inner and outer lips or labia) become engorged due to the increased blood supply and, inside the body, the top of the vagina expands. The woman's pulse and breathing quicken, and blood pressure rises. A woman may become flushed, especially on the chest and neck, due to the blood vessels dilating.

The impact of pregnancy and birth on sexual arousal has received less attention than the impact on sexual desire. When assessed, sexual arousal is most commonly reported as one index of sexual function on a measurement tool, such as the FSFI (Pauls *et al.* 2008, Klein *et al.* 2009, Chivers *et al.* 2011, Lurie *et al.* 2013, Yee *et al.* 2013, Yıldız 2015, Leeman *et al.* 2016, Lagaert *et al.* 2017) or the Arizona Sexual Experience Scale (ASEX) (Acele & Karaçam 2012). Nevertheless, identical patterns observed in the changes to women's sexual desire are also seen in women's sexual arousal. It has been reported that sexual arousal reduces during pregnancy (Pauls *et al.* 2008, Yıldız 2015), with a further reduction observed three months postpartum (Pauls *et al.* 2008, Rathfisch *et al.* 2010, Yıldız 2015). Studies indicate that six months after birth sexual arousal scores did not reached pre-pregnancy levels (Baksu *et al.* 2007, Leeman *et al.* 2016, Lagaert *et al.* 2017). Although there was some improvement seen as time elapsed from six to twelve months postpartum (De Souza *et al.* 2015), levels of sexual

arousal never returned to pre-pregnancy scores (Acele & Karaçam 2012, Khajehei *et al.* 2015). As seen in the literature on sexual desire, interpretation of results is impeded by sample size, retrospective designs, uncertain postpartum timeframes and a heavy reliance on measurement tools.

2.4.1.2 Female orgasmic disorder

In the same way the literature concerning the effect of pregnancy and birth on sexual desire and arousal is dominated by the use of measurement tools, so too is the literature on women's experience of orgasm post birth. The results of studies that address problems with orgasm are more difficult to interpret due to the spread of timeframes from six weeks to twelve months postpartum, and the absence of pre-pregnancy data (Signorello *et al.* 2001, Gungor *et al.* 2007, Serati *et al.* 2010). Some studies include occasional third trimester data (von Sydow 2002, Connolly *et al.* 2005) and there is inconsistent use of language in reporting issues relating to orgasm, for example, 'difficulty reaching orgasm', 'problems with orgasm' and 'anorgasmia'. The retrospective nature of some of the studies (Barrett *et al.* 2000, Signorello *et al.* 2001, Klein *et al.* 2009) also adds to the challenge in interpretation.

Prevalence of problems with orgasm varied across the studies, ranging from 33%-39% at three months (Barrett *et al.* 2000, McDonald *et al.* 2015a), 23%-38% at six months (Barrett *et al.* 2000, Signorello *et al.* 2001) to 34% at twelve months postpartum (McDonald *et al.* 2015a). Nearly all, that is, 87% of the sample of 150 women in the United States of America (USA) experienced orgasm before pregnancy, with this dropping to 33% during the third trimester, 39% at six weeks, 60% at three months and 61% at six months postpartum (Connolly *et al.* 2005). In another USA study six months postpartum, 26% of 626 women were less or much less likely to report reaching orgasm (Signorello *et al.* 2001), whereas Serati *et al.* (2008) determined that 12.6% (n=38/302) of postpartum women in Italy had anorgasmia at six months and 13% at twelve months postpartum. Elsewhere, orgasm scores fell from pregnancy to six months postpartum as measured by the FSFI (Pauls *et al.* 2008). When a longer term view is taken, orgasm scores showed an improvement between six and twelve months postpartum with no difference between the initial scores at twenty-eight weeks gestation and twelve months postpartum in a sample of 440 primigravid women in Australia (De Souza *et al.* 2015).

2.4.1.3 Genito-pelvic pain/penetration disorder

Genito-pelvic pain/penetration disorder refers to a condition in which people experience difficulty having intercourse and feel significant pain upon penetration (American Psychiatric Association 2013). The severity of the condition ranges from a total inability to experience vaginal penetration in any situation to the ability to experience penetration easily in one situation but not in another. Genito-pelvic pain/penetration disorder is commonly referred to as sexual pain disorder or dyspareunia and often encompasses: pain during sexual intercourse, pain on penetration and pain on orgasm (Binik 2005, 2010).

Most women across the included studies had resumed vaginal intercourse by three months postpartum with a significant proportion (30%-62%) of these reporting dyspareunia at this point (Barrett *et al.* 2000, Connolly *et al.* 2005). The prevalence rates of dyspareunia tended to decrease at six months postpartum compared to three months postpartum; nevertheless, sexual intercourse is complicated by pain for many women at this time. For some women dyspareunia continued to persist twelve months after birth (Table 2.3).

Table 2.3 Dyspareunia at varied time points postpartum

Study	3 months	6 months	12 months
Barrett et al. (2000)	62% (n=225/364)	31% (n=123/403)	-
Connolly et al. (2005)	30% (n=24/79)	17% (n= 13/77)	-
Safarinejad et al. (2009)	35% (n=296/836)	19% (n=161/836)	11% (n=94/836)
Acele & Karaçam (2012)	58% (n=133/230)	-	-
McDonald et al. (2015b)	45% (n=431/964)	44% (n=496/1144)	28% (n=33/1184)
Serati et al. (2008)	-	24% (n=72/302)	8% (n=26/330)
Bertozzi et al. (2011)	-	17% (n=64/377)	-
Schytt et al. (2005)	-	-	11% (n=253/2413)
Bertozzi et al. (2010)	-	-	16% (n=97/602)
Fodstad et al. (2016)	-	-	18% (n=102/561)

In a study by McDonald *et al.* (2016), 23% (n=289/1236) of women reported persistent dyspareunia eighteen months after the birth of their first baby. The type of pain was further analysed; 10% (n=119) described their pain as mild, 9% (n= 110) reported discomforting pain and 3% (n=31) described their pain as distressing, horrible or excruciating. I would suggest that irrespective of the severity of the pain, any pain experienced during sex is likely to impact negatively on the woman's pleasure response and enjoyment of sexual intercourse. When interpreting prevalence of dyspareunia a number of considerations need to be taken into

account: the wording of questions and response options, for example, whether dyspareunia includes all types of genital pain during sexual intercourse; the timing of data collection, insomuch as, are women subject to recall bias; and whether pain on first sexual intercourse has been distinguished from pain during subsequent sex. It is also notable that while prevalence rates of persistent dyspareunia are available, there is little published data on the impact of this persistent pain on women, their relationship with their partner, their confidence and quality of life.

2.4.2 Resumption of sexual activity

The time when sexual activity was resumed after birth is included in this literature review as it is addressed in the majority of studies on postpartum sexual health. Traditionally there has been an assumption in Western cultures that women can and do resume sexual intercourse six weeks after birth. Media does little to offset this notion with weekend magazines and social media adding little evidence-based information for women on what is an appropriate time to resume sexual intercourse (Miller 2016, O'Neill White 2017). McDonald & Brown (2013) carried out a prospective cohort study with 1507 first-time mothers in Australia, the Maternal Health Study; they differentiated between sexual intercourse (vaginal sex) and sexual activity (any form of sexual contact that may or may not include sexual intercourse) which is helpful as many do not do this (Radestad *et al.* 2008, Yıldız 2015, Fodstad *et al.* 2016). The absence of a differentiation can make results difficult to interpret, especially as it offers an assumption that it is sexual intercourse only that constitutes good sexual health rather than the intimacy associated with sexual touch, masturbation, oral sex and kissing. McDonald and Brown's (2013) study revealed that 41% (n=541), 65% (n=851) and 78% (n=1020) of women had attempted sexual intercourse at six, eight and twelve weeks postpartum, respectively. In the same study women had resumed other forms of sexual activity sooner than sexual intercourse 53%, 73% and 86.4% by six, eight and twelve weeks postpartum (McDonald & Brown 2013). Variation in sexual intercourse and sexual activity is seen across other studies: 51%, 47% and 41% of women had resumed sexual intercourse eight weeks postpartum (Buhling *et al.* 2006, Radestad *et al.* 2008, Fodstad *et al.* 2016) respectively. Twelve weeks postpartum 63% and 78% had resumed sexual activity (Radestad *et al.* 2008, Faisal-Cury *et al.* 2015). Non-coital activities, such as kissing, masturbation and oral sex were included measures in five reviewed studies. These studies, however, were not explicit on when these activities resumed compared to sexual intercourse (Barrett *et al.* 2000, von Sydow *et al.* 2001, DeJudicibus & McCabe 2002, Pauls *et al.* 2008, Khajehei *et al.* 2015).

The literature on when women resume sexual activity or sexual intercourse is not definitive, as women are often asked to report retrospectively when they resumed sexual activity, increasing the risk of recall bias (Faisal-Cury *et al.* 2015, Fodstad *et al.* 2016). The provided timeframes, such as '1-2 months', '2-3 months', are often too wide for women to accurately report when they resumed sexual intercourse. Study samples are often small reducing the power of the study and increasing the margin of error (Yıldız 2015). Additionally, the interplay of language used in reporting, for example, 'sexual activity', 'sexual life' and 'intimacy' does not accurately tell the reader what has been resumed. Arbitrary classifications of what constitutes as delayed resumption of sexual intercourse, for example, six weeks (McDonald & Brown 2013), eight weeks (Fodstad *et al.* 2016) or longer, further exacerbate difficulty in pooling data and drawing conclusions regarding when women resume sexual intercourse and what might be considered a 'normal' or usual timing for resumption of sexual intercourse. Arguably, though, attempting to bracket resumption of sexual intercourse into a 'normal' timeframe is counterproductive, and what ultimately matters is resumption when a couple feel ready and comfortable to resume some form of sexual activity.

2.4.3 Frequency of sexual intercourse

Although not explicitly stated, frequency of sexual activity or sexual intercourse appears to be an indicator of postpartum sexual health, as several authors included it as a measure in their research without justification. Data from the general population does positively associate frequency of sexual activity with sexual satisfaction, although it is unclear what frequency confers sexual satisfaction. Some writers suggest that the relationship is individual, dependent on family, relational, age, social and emotional factors (Richters *et al.* 2003, Smith *et al.* 2011).

At six months postpartum, sexual activity (oral sex, anal sex, masturbation or vaginal sex) had not reached pre-pregnancy levels (Barrett *et al.* 2000, DeJudicibus & McCabe 2002, Pauls *et al.* 2008); although masturbation almost reached pre-pregnancy levels at four to six months postpartum in two studies (Hyde *et al.* 1996, von Sydow *et al.* 2001). Women with sexual dysfunction (as per FSFI) were more likely to have less frequent or no sexual activity than women with no sexual dysfunction (Khajehei *et al.* 2015).

2.4.4 Satisfaction with sexual life

Sexual satisfaction was been defined as '*an affective response arising from one's subjective evaluation of the positive and negative dimensions associated with one's sexual relationship'* Lawrance & Byers (2005, p. 268). How pregnancy and birth impacts on women's satisfaction with their sexual life is regularly measured in studies. Satisfaction with sexual life is commonly measured as an index of sexual function on the FSFI (Pauls *et al.* 2008, Klein *et al.* 2009, Chivers *et al.* 2011, Lurie *et al.* 2013, Yee *et al.* 2013, Khajehei *et al.* 2015, Yıldız 2015, Leeman *et al.* 2016, Lagaert *et al.* 2017), the ASEX (Acele & Karaçam 2012), the Intimate Relationship Scale (Rogers *et al.* 2009) and using the Golombok Rust Inventory of Sexual Satisfaction (GRISS) (Dean *et al.* 2008). In these measures women are asked to indicate if they are: 'very satisfied', 'moderately satisfied', 'neither satisfied nor dissatisfied', 'moderately dissatisfied' or 'very dissatisfied' with their sexual life. The results from these studies have consistently (over the past two decades) shown that satisfaction with sexual life declines immediately postpartum (von Sydow 1999, Signorello *et al.* 2001, DeJudicibus & McCabe 2002, Leeman & Rogers 2012, Faisal-Cury *et al.* 2015, Khajehei *et al.* 2015, Yıldız 2015).

In a cross-sectional study of 768 new parents in Sweden, 36% of mothers described themselves as sexually dissatisfied six months postpartum (Ahlborg *et al.* 2005). When asked to compare how sexually satisfied they were six months postpartum compared to pre-pregnancy, 24% (n=132) of women said their sexual satisfaction was worse or much worse (Signorello *et al.* 2001). DeJudicibus & McCabe (2002) similarly reported that six months after birth women's sexual satisfaction had not returned to pre-pregnancy levels. Using the FSFI, 70% (229/325) of postpartum women in Australia self-reported dissatisfaction with their sexual life. It is noteworthy that women included in the study ranged from 0-12 months postpartum; having recently given birth could explain the very high proportion of women dissatisfied with their sexual life (Khajehei *et al.* 2015). Using the Maudsley Marital Questionnaire it was demonstrated that dissatisfaction with sexual life improved between three and twelve months postpartum in a sample of 377 women in the Netherlands (van Brummen *et al.* 2006). A similar trend was observed using the FSFI at three, six and twelve months postpartum in Iran (Safarinejad *et al.* 2009). Unfortunately, neither study provided pre-pregnancy data for comparison purposes so return to pre-pregnancy levels could not be ascertained. De Souza *et al.* (2015) found that women were more dissatisfied with their sexual life at six months postpartum compared to during pregnancy; however, their dissatisfaction

did not persist to twelve months which is different to Signorello *et al.* (2001) and DeJudicibus & McCabe (2002).

2.4.5 Relationship satisfaction

Relationship satisfaction can be defined in similar terms to sexual satisfaction; that is '*an affective response arising from one's subjective evaluation of the positive and negative dimensions associated with one's romantic relationship*' (Fallis *et al.* 2016, p. 822). The impact of pregnancy and birth on women's satisfaction with their relationship has been addressed by a small number of studies. Relationship satisfaction has been linked to sexual satisfaction among the general population (Byers 2005, Yeh *et al.* 2006), and postpartum couples appear to follow the same pattern (De Judicibus & McCabe 2002, van Brummen *et al.* 2006, Witting *et al.* 2008a). DeJudicibus & McCabe (2002) determined that relationship satisfaction influenced women's level of sexual desire, and those with higher relationship satisfaction reported more sexual desire and more frequency of intercourse. Khajehei *et al.* (2015) noted that women who were classified as having sexual dysfunction as per FSFI also had significantly higher rate of relationship dissatisfaction as determined by the Relationship Assessment Scale (RAS) compared to those who did not have sexual dysfunction (46% versus 22% respectively).

Given the interdependence of sexual satisfaction and relationship satisfaction (Fallis *et al.* 2016, McNulty *et al.* 2016) the repercussion of mismatched sexual desire and sexual dissatisfaction could extend to more global evaluations of the relationship. One study examined the degree and direction of mismatched sexual desire in 255 heterosexual new parents in Canada and its impact on sexual satisfaction and relationship satisfaction; 5% (n=12) of couples' levels of desire was in perfect agreement with each other. In 25% (n=64) of couples women reported higher desire than men and in 70% (n=170) of couples men had higher desire than women (Rosen *et al.* 2017a). The direction of the discrepancy was important, with couples feeling less sexually and relationally satisfied when women had higher sexual desire compared to when men had.

2.4.6 Risk factors for postpartum sexual health issues

Factors that influence women's postpartum sexual health are commonly explored and assessed in the literature. The most frequently examined risk factors are mode of birth and

perineal trauma, although pre-pregnancy sexual health, breastfeeding, women's perception of their body image and the possible influence of depression are also assessed.

2.4.6.1 Mode of birth

The influence of mode of birth on postpartum sexual health (dyspareunia and resuming sexual intercourse) is unclear. Conflicting results from a variety of studies present as challenging when attempting to reach a definitive conclusion. Varying sample sizes, study designs, classification of modes of birth, for example, grouping all caesarean sections (elective and emergency) together for analysis, and factors included or excluded from multivariable analyses models, such as pre-pregnancy sexual health issues and breastfeeding, all make the drawing of conclusions difficult.

With respect to mode of birth, the most commonly posed research question appears to be that of an association between mode of birth and the development of dyspareunia postpartum (Barrett *et al.* 2000, Signorello *et al.* 2001, Connolly *et al.* 2005, Schytt *et al.* 2005, Serati *et al.* 2008, Klein *et al.* 2009, Safarinejad *et al.* 2009, Chang *et al.* 2010, Acele & Karaçam 2012, Hosseini *et al.* 2012, Lurie *et al.* 2013, De Souza *et al.* 2015, Faisal-Cury *et al.* 2015, Lipschuetz *et al.* 2015, McDonald *et al.* 2015b), with findings, in the main, indicating that dyspareunia is greater six months postpartum compared to during pregnancy for all modes of birth except caesarean section. Of the 37% (n=72/193) who reported dyspareunia 10-14 months after birth, women who had an elective caesarean section were less likely to report dyspareunia than any other mode of birth group (Lipschuetz *et al.* 2015). Women who had an operative vaginal birth had a greater than threefold increase of experiencing dyspareunia six months postpartum, and women who had an emergency caesarean section had a twofold odds increase compared to women who had a spontaneous vaginal birth with an intact perineum, when other maternal and obstetric factors were taken into account (McDonald *et al.* 2015b). This association persisted to eighteen months postpartum. Barrett *et al.* (2000) and Klein *et al.* (2009) however, contradict this, both indicating that any protective effect of caesarean section on developing postpartum dyspareunia is short term only, up to three months after birth. Nonetheless, dyspareunia had improved for all modes of birth between six and twelve months to the point where there was no difference between self-reported dyspareunia in pregnancy and dyspareunia at twelve months postpartum (De Souza *et al.* 2015).

Several papers included in this review determined that mode of birth did not impact on the development of sexual health problems in general at six weeks, three and six months postpartum (Lurie *et al.* 2013), at six months and twelve months postpartum (Hosseini *et al.* 2012) and during the first year postpartum (Acele & Karaçam 2012). Rather than reporting on individual sexual health issues they reported on total sexual health scores using measurement tools, such as the FSFI. Also they did not develop complex multivariable models that adjusted for other obstetric and maternal factors when drawing their conclusions.

Mode of birth is seen to have an influence on when women resumed sexual intercourse in the short term. For example, of 1507 women at six weeks postpartum, those who had a forceps-assisted birth were one and a half times more likely not to have resumed sexual intercourse than women who had a spontaneous vaginal birth (OR 1.5 CI 1.0-2.2). However, this association did not persist to three months postpartum (McDonald & Brown 2013). There were significant differences in the time to resumption of sexual intercourse between women who had an elective caesarean section and those who had: a spontaneous vaginal birth, vaginal birth with episiotomy, operative vaginal birth or an emergency caesarean section. Women who had an elective caesarean section resumed sexual intercourse sooner in the postpartum period than women who had other modes of birth (Safarinejad *et al.* 2009). In a study of 644 women in Brazil eleven months after birth there was no association seen between mode of birth and timing of resumption of sexual activity three months postpartum (Faisal-Cury *et al.* 2015), similar to Buhling *et al.* (2006), McDonald & Brown (2013) and Fodstad *et al.* (2016).

2.4.6.2 Perineal trauma

The potential influence of perineal trauma on postpartum sexual health is equally of interest to many in this field of study (Signorello *et al.* 2001, Mous *et al.* 2008, Radestad *et al.* 2008, Serati *et al.* 2008, Rogers *et al.* 2009, Rathfisch *et al.* 2010, Bertozzi *et al.* 2011, Lurie *et al.* 2013, McDonald & Brown 2013, Fodstad *et al.* 2016, Leeman *et al.* 2016). Within the studies perineal trauma is defined as any damage to the genitalia during childbirth that occurs spontaneously or intentionally by surgical incision (episiotomy). Spontaneous trauma is categorised into: 1st degree tears that involve injury to the perineal skin and/or vaginal mucosa (normally unsutured), 2nd degree tears are injuries to the perineum that involve the perineal muscles (normally sutured) and Obstetric Anal Sphincter Injuries (OASI) are injuries to the perineum that involve the anal sphincter complex and/or anorectal mucosa (always sutured).

Women who had an episiotomy or a sutured perineal tear were less likely to have resumed sexual intercourse six weeks after birth (OR 2.13 CI 1.6-2.9 and OR 1.86 CI 1.4-2.4) respectively, compared to those who had an intact perineum. This association persisted to twelve weeks after birth for women who had an episiotomy only (OR 1.67 CI 1.2-2.3) (McDonald & Brown 2013). In a large population-based cohort study in Sweden (n=2490) it was concluded that women who had any form of perineal trauma were less likely to have resumed sexual intercourse within three months postpartum. This association persisted six months postpartum for women who had an OASI (Radestad *et al.* 2008). Correspondingly, Fodstad *et al.* (2016) determined that OASI was a significant risk factor for delayed resumption of sexual intercourse two and three months postpartum. In the same study women in Norway who had an OASI (n=28/533) were also significantly more likely to report 'having difficulties with coitus' than any other group of women with perineal trauma (Fodstad *et al.* 2016).

The association between perineal trauma and delayed resumption of sexual activity was not seen to persist to six months postpartum in a study that included a very comprehensive pelvic floor assessment using physical examination, ultrasound and completion of several pelvic floor function questionnaires on 448 nulliparous women in the USA (Leeman *et al.* 2016). They demonstrated that any degree of spontaneous perineal trauma (including OASI) was not associated with delayed resumption of sexual activity or sexual dysfunction as measured using the FSFI six months postpartum. These results echo others which indicate that perineal trauma had no influence on the development of dyspareunia at six months (Serati *et al.* 2008), twelve months (Serati *et al.* 2008, Bertozzi *et al.* 2010) and eighteen months (McDonald *et al.* 2015b) even when other obstetric and maternal factors are taken into account. Perineal trauma was not categorised into 1st 2nd and OASI by McDonald and colleagues, rather it was categorised by vaginal birth with intact/unsutured perineum or vaginal birth with sutured tear/episiotomy. This might explain why OASI was not identified as a specific risk factor for sexual health issues in this large cohort (McDonald *et al.* 2015b). In other research perineal trauma negatively impacted on FSFI scores at six months postpartum but not twelve months (De Souza *et al.* 2015) and also did so at 10-14 months postpartum (Lipschuetz *et al.* 2015). In Signorello *et al.* (2001) study an association was seen between perineal trauma and dyspareunia at three months postpartum had resolved by six months when other obstetric and maternal factors were taken into account.

There are conflicting results on the influence of perineal trauma on long term postpartum sexual health, with issues relating to sample size, categorising perineal trauma and

retrospective study designs complicating interpretation of results. However, there does appear to be an association between any form of perineal trauma and delaying resuming sexual intercourse six weeks postpartum, and an OASI seems to be predictive of delaying resuming sexual activity to three and six months. Perineal trauma was not seen to influence developing dyspareunia.

2.4.6.3 Pre-pregnancy sexual health

Barrett *et al.* (2000) were one of the first to draw attention to the notion that pre-pregnancy dyspareunia was strongly associated with experiencing dyspareunia three and six months postpartum. This was corroborated in a subsequent study that followed 1507 women to six months after birth (AOR 1.91, CI 95% 1.4-2.6 $p<0.001$) and eighteen months after birth (AOR 2.09, CI 95% 1.5-2.8) (McDonald *et al.* 2015b). Sexual health issues in pregnancy also predisposed women to developing issues postpartum. Women who were reported to have sexual health problems as per ASEX (i.e. problems with sex drive, arousal, vaginal lubrication, orgasm and satisfaction with orgasm) during pregnancy were significantly more likely to develop problems after birth (Acele & Karaçam 2012). A comparable finding was illustrated by van Brummen *et al.* (2006) where the main predictive factor for no sexual activity twelve months postpartum was no sexual activity at twelve weeks gestation. Similarly, dissatisfaction with sexual life was associated with not being satisfied with sexual life at twelve weeks gestation; however there were no pre-pregnancy data with which to make direct comparisons.

There appears to be agreement that pre-pregnancy sexual health issues predispose women to postpartum sexual health issues and there is conflict regarding the influence of sexual health during pregnancy. It is noteworthy that some studies associating sexual health during pregnancy with postpartum sexual health did not have pre-pregnancy data (van Brummen *et al.* 2006, Acele & Karaçam 2012).

2.4.6.4 Breastfeeding

The impact of breastfeeding on sexual health in postpartum women has emerged as a topic of interest to researchers in midwifery, sexology and lactation in recent years. Breastfeeding may be accompanied by a decline in the levels of oestrogen and androgens, which can result in the decrease of sexual desire and cause vaginal dryness and dyspareunia (Avery *et al.* 2000, Barrett *et al.* 2000, Signorello *et al.* 2001, Connolly *et al.* 2005, Serati *et al.* 2010, Rosen *et al.*

2017a). Breastfeeding was the only predictive factor for persistent dyspareunia six months postpartum in a sample of 155 women (AOR 3.3 CI 95% 1.8-6.4) in a multivariable analysis including mode of birth and perineal trauma (Connolly *et al.* 2005). Signorello *et al.* (2001) also found breastfeeding conferred a greater than fourfold risk for experiencing dyspareunia six months postpartum compared to women who were not breastfeeding (OR 4.4 CI 95% 2.7-7.7), but this risk was reduced to 1.5 fold, in a similar study of 1507 women that adjusted for obstetric and maternal factors, such as mode of birth, perineal trauma and maternal age (AOR 1.55 CI 95% 1.1-12.1) (McDonald *et al.* 2015b).

Breastfeeding can also result in a woman's fatigue, changes in her sexual desire and alterations to a couple's relationship as it is a time-consuming activity and may interfere with emotional contacts between partners (Leeman & Rogers 2012). DeJudicibus & McCabe (2002) reported that compared with non-breastfeeding women, those who were breastfeeding their babies had less sexual desire in the twelve months after birth and were more likely to delay resumption of sexual intercourse. An association between breastfeeding and delayed resumption of sexual intercourse at six weeks has been reported in two other studies of 2490 and 1507 women (Radestad *et al.* 2008, McDonald & Brown 2013), although it could be questioned if six weeks after birth is an actual delay (McDonald & Brown 2013). Women who were exclusively breastfeeding (n=90) their baby were more likely to be classified as having sexual dysfunction using the FSFI in the cross-sectional study by Khajehei *et al.* (2015).

2.4.6.5 Depression

A limited number of studies included depression as a possible risk factor for postpartum sexual health issues (DeJudicibus & McCabe 2002, Morof *et al.* 2003, Moel *et al.* 2010, Chivers *et al.* 2011, Khajehei *et al.* 2015, McDonald *et al.* 2015b, McDonald *et al.* 2016). Postnatal depression affects 8%-20% of women (Serati *et al.* 2010). It is a complex interplay of physical, social and psychological factors that may contribute to worsening sexual health for women. Underlying mental health conditions such as depression and anxiety may appear and/or become exacerbated during pregnancy and the postpartum period and often go underdiagnosed and undertreated (Gold *et al.* 2007), potentially having an impact on women's sexual health. It is notable that there is a significant lack of published literature measuring the influence of postpartum anxiety on postpartum sexual health, particularly when prevalence rates of postpartum anxiety are reported to be 12.7% in a study of 4366 first-time mothers, six months postpartum (Yelland *et al.* 2010).

DeJudicibus & McCabe (2002) incorporated a number of validated tools to assess: depressive symptoms, satisfaction with relationship, sexual desire, frequency of sexual intercourse and sexual satisfaction pre-pregnancy, during pregnancy at three and six months postpartum in Australia. Three months postpartum depression was associated with lower frequency of sexual intercourse; depression appeared to apply an unexpected positive influence on women's sexual desire six months postpartum insomuch as depressed women reported higher sexual desire than non-depressed women. This unforeseen finding may be related to the low rate of postnatal depression in the sample of 138 women, which could suggest a lower response rate from women who were depressed, coupled with the less than 50% retention rate six months postpartum. Depressed women may not have continued to participate in the study.

Women with postnatal depression were less likely than those not depressed to have resumed sexual intercourse six months after birth and were more likely to report sexual health problems (e.g. dyspareunia, lack of vaginal lubrication and difficulties with orgasm) (Morof *et al.* 2003). Moel *et al.* (2010) found a significant decrease in sexual desire and satisfaction in 120 women who had been depressed in the USA, even after their depression had resolved. This could be a lingering effect of the alteration in relationships that comes with depression or alternatively it could be a side effect of the medications used to treat depression (Higgins 2007). In a pilot study women who were depressed, as assessed by the Edinburgh Postnatal Depression Scale (EPDS) (n=15/77) in Canada had significantly lower scores for sexual desire, arousal, orgasm and satisfaction using the FSFI, than women who were not depressed, indicating sexual dysfunction (Chivers *et al.* 2011). Khajehei *et al.* (2015) noted that 209 women who were classified as having sexual dysfunction as per FSFI also had significantly higher rates of depression compared to those (n=116) who did not have sexual dysfunction in Australia (31% versus 12% respectively). It appears that depressed women are more likely to have some sexual health issues postpartum but the relationship between mental health and sexual health in postpartum women is as yet under-researched.

2.4.6.6 Body image

Body image refers to feelings, attitudes and evaluations of one's own body that includes perceptions of the body as a whole and perceptions regarding specific areas of the body (Grogan 2008). In a meta-content analysis of fifty-nine studies it was concluded that women who perceive themselves as attractive, including feeling attractive to their partners,

experienced higher levels of sexual enjoyment, greater frequency of sexual activity and less dyspareunia (von Sydow 1999). There is evidence that women are dissatisfied with their body after birth (Olsson *et al.* 2005, Pastore *et al.* 2007, Rallis *et al.* 2007, Pauls *et al.* 2008); however, there is limited evidence as to how, if at all, body image impacts on postpartum sexual health. Women's perception of their body image worsened during pregnancy and six months postpartum compared to pre-pregnancy, however the deterioration in perception of body image was only statistically significant at six months postpartum (p=0.01) (Pauls *et al.* 2008). Whereas, Hipp *et al.* (2012) and Acele & Karaçam (2012) found that any association between dissatisfaction with body image and postpartum sexual health did not persist in multivariable analyses three and twelve months postpartum respectively.

A significant association was seen between body satisfaction, body image and sexual function, using a variety of validated scales to measure sexual function, body image self-consciousness, body satisfaction and genital self-image[5]. In this study, authors concluded that body image self-consciousness and genital self-image are predictors of postpartum sexual function (Jawed-Wessel *et al.* 2017). This is significant because elsewhere it has been determined that women experienced greater body image dissatisfaction six months postpartum compared to pre-pregnancy, during pregnancy and twelve months postpartum (Rallis *et al.* 2007), potentially experiencing sexual health issues that may be related to perception of body image.

In a pilot study (n=69) in the USA to assess the acceptability of the Vaginal Changes, Sexual and Body Esteem scale (VSBE) for use with postpartum women, it was concluded that women with episiotomies had significantly lower sexual/body esteem compared to those who did not eight months postpartum (Zielinski *et al.* 2017). This is relevant when taking into account Jawed-Wessel *et al.* (2017) findings that poor genital self-image is a predictor for impaired sexual function six months postpartum. First-time parents/couples (n=99) who partook in a cross-sectional postal survey in the USA on sexual concerns identified that a mother's perception of her body image continued to impact on the couples' sexual health twelve months after birth (Pastore *et al.* 2007).

The impact of body image on postpartum sexual health is ambiguous for several reasons. Firstly, several studies that included body image as an outcome measure do not provide a

[5] Genital self-image in this study refers to women's feelings and beliefs about their own genitals (Jewed-Wassel *et al* 2017).

definition for body image, therefore it is unclear what exactly is being measured. Secondly, conflicting results and retrospective data collection could impede definite conclusions being made.

2.4.7 Comment on measurement tools used in the included studies

The over-reliance on measurement tools for determining postpartum sexual health in the literature sourced for this review is significant; the majority of studies used some form of measurement tool or scale. While these tools indicate an application of postpartum sexual health as an area of interest to research and practice, the problem is the usefulness of this application. The variety of tools used included the Glomokok Rust Inventory of Sexual Satisfaction (Dean *et al.* 2008); the Abbreviated Sexual Function Questionnaire (Doumouchtsis *et al.* 2011); the Arizona Sexual Experience Scale (Acele & Karaçam 2012); the Female Sexual Function Index (Baksu *et al.* 2007, Pauls *et al.* 2008, Klein *et al.* 2009, Safarinejad *et al.* 2009, Chang *et al.* 2010, Chang *et al.* 2011, Chivers *et al.* 2011, Hosseini *et al.* 2012, Lurie *et al.* 2013, Yee *et al.* 2013, De Souza *et al.* 2015, Khajehei *et al.* 2015, Yıldız 2015, Leeman *et al.* 2016, Lagaert *et al.* 2017); the Maudsley Marital Questionnaire (van Brummen *et al.* 2006); and the Sexual Desire Inventory (Hipp *et al.* 2012), all of which place emphasis on measuring physical/biological sexual function outcomes. They originate from dated views of women's sexual response, in particular Masters and Johnson's sexual response cycle and dated classifications of female sexual dysfunction (American Psychiatric Association 1994). Constructing measurement tools on dated response cycles and classifications of sexual dysfunction is likely to skew the reported incidences of sexual dysfunctions, in that, a greater number of women would be diagnosed with a dysfunction. For example, if a woman experiences a loss of sexual desire postpartum but is overall happy with her intimate relationship and not distressed by the change to sexual desire experienced then she should not be diagnosed as having a sexual dysfunction. However, using the older classifications of sexual dysfunction this woman could be diagnosed with sexual desire disorder.

An additional consideration is the lack of justification for choosing the outcomes that are commonly measured; namely sexual desire, sexual arousal, vaginal lubrication, dyspareunia and problems with orgasm. Appendix 2 provides a summary of the outcomes measured by the different tools identified in this literature review. It appears that the measured outcomes are based on the linear sexual response cycle put forward by Masters and Johnson which has been critiqued in Section 2.3.1. The most frequently utilised measurement tool, the FSFI has not

been validated for use with pregnant or postpartum women. Furthermore, the tools used focus exclusively on heterosexual penetrative vaginal sex. There is an absence of other dimensional characteristics of postpartum sexual health such as, psychological, social, cultural and relational dimensions. In addition, the lack of dialogue on women's motives for participating in sexual activity in the measurement tools used seriously impedes a complete examination of postpartum sexual health. The lack of subjectivity potentially leads to a one-dimensional view of postpartum sexual health, where women are labelled as sexually dysfunctional with too much ease.

2.4.8 Women's perspectives on postpartum sexual health: qualitative data

There appears to be a paucity of qualitative research exploring women's experiences of postpartum sexual health. In total, seven studies were sourced. Qualitative descriptive, grounded theory or phenomenological methods were described and data were collected using focus groups or one-to-one interviews. Sample sizes ranged from 10-32 postpartum women. The samples tend to be white, well educated (degree level or above), married, older (>35 years) women in heterosexual relationships from Europe and Australia. First-time mothers and multiparous women were included in the samples. Sampling limitations aside, the narrative provided by these studies gives a picture of factors that women considered important in relation to their postpartum sexual health and how women experience their sexual health after birth.

In a semi-qualitative approach with twenty-six women in Austria who provided data on their sexual health before pregnancy (asked retrospectively), early pregnancy, late pregnancy and six months postpartum, women reported a significant drop in their perceived importance of sexuality, importance of sexual intercourse and contentment with sexual life from pre-pregnancy to six months postpartum (Trutnovsky *et al.* 2006). Women reported that the lack of sleep, stress, tiredness and dyspareunia were the main reasons for low sexual activity and discontentment with sexual life six months postpartum. Affection (i.e. kissing and cuddling) remained important to women at all four time points. Women in this study also identified sexual disagreement between partners as a source of discontent, supporting findings from elsewhere that identified mismatched sexual desire within a couple as a cause of dissatisfaction with sexual life (Hipp *et al.* 2012, Schlagintweit *et al.* 2016, Rosen *et al.* 2017b).

Ten women with experience of postpartum morbidity (urinary, bowel or sexual problems) were interviewed about their postpartum recovery in Australia (O'Reilly *et al.* 2009). Sexual health was identified as an area of concern for women; they feared dyspareunia, leaking urine and vaginal flatulence. Women also described feelings of failure and guilt because their desire for sex had changed and they no longer engaged in a sexually satisfying relationship with their partner. This is similar to findings from Williams *et al.* (2005) where thirty-two women who experienced an OASI in the UK described fear and apprehension about resuming sexual intercourse and engaging in regular sexual intercourse. Women in this study described two ways of dealing with their apprehension, either sexual avoidance or pretending to their partner that there was no issue.

Eighteen women 2.5-3.5 years after their first birth were interviewed about their experiences of changes to their sexual relationship, sexuality and intimacy as a result of pregnancy, childbirth and parenting in Australia. The themes that emerged were psychological factors affecting intimacy (tiredness, changing lifestyle, emotional connection with child and body image issues) and changes to sexual and intimate relationships (loss of desire, changing intimacy, that is, physical and emotional intimacy and changing view of sexuality). Women identified a number of strategies that helped them. These included teamwork (i.e. sharing baby care and household chores), time together as couple and agreeing on priorities (i.e. sleep, baby care and/or sexual activity) (Woolhouse *et al.* 2012). The same sample of women described how they would have liked reassurance from a healthcare professional that changes to their sexual health were 'normal', many feeling that their sexual health needs were not being addressed adequately (Woolhouse *et al.* 2014).

There was a heavy emphasis on physical changes that impacted on postpartum sexual function in the sample of thirty women interviewed eight weeks after birth in Spain (Martínez-Martínez *et al.* 2017). In this exploratory study women reported tiredness, dyspareunia, vaginal dryness, changed orgasm, breastfeeding and decreased desire as impacting on their sexual health. Women also identified the attention the baby required, their perception of their body image and their changed relationship with their partner as affecting their sexual health. These findings are similar to that of Woolhouse *et al.* (2012) and Olsson *et al.* (2005), indicating that the concerns women described in the short term, that is, eight weeks post birth, are similar to those described by women three months and three and a half years after birth. Focus group interviews with twenty-seven women in Sweden ranging from 3-24 months postpartum identified perception of body image, changed sexual patterns, mismatched sexual desire and

the need for reassurance as essential components of sexual health after birth (Olsson *et al.* 2005).

Tone Ahlborg and colleagues carried out a longitudinal study with 820 first-time parents in Sweden to describe their relationship quality. Data were collected through self-reporting questionnaires six months, four years and eight years after the birth of the first baby (Ahlborg & Strandmark 2001, Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Ahlborg *et al.* 2008). Responses to two open questions on factors that influenced the quality of the intimate relationship six months postpartum were analysed; adjusting to new roles, couples' intimacy (togetherness, affection and love) and coping through communication emerged as factors that influenced the quality of their intimate relationship (Ahlborg & Strandmark 2006).

2.4.8.1 Women's experience of their postpartum sexual health

The narrative from the qualitative studies included in this review demonstrated that women's postpartum sexual health is complex. Women described physical considerations in relation to their postpartum sexual health; dyspareunia was experienced, this led to feelings of fear and apprehension about engaging in sexual intercourse (Martínez-Martínez *et al.* 2017). Women coped with this by avoiding sexual intercourse or ignoring their own feelings of apprehension and continuing to engage in sexual intercourse (Williams *et al.* 2005, O'Reilly *et al.* 2009). Breastfeeding women described how they excluded their breasts during sexual activity, as they viewed their breasts as a source of nutrition for their baby rather than a part of the body associated with sexual arousal and foreplay (Olsson *et al.* 2005, Martínez-Martínez *et al.* 2017).

Women repeatedly described a discordance in sexual desire between themselves and their partner, this caused feelings of guilt and failure that they were not living up to their own expectation of sexual activity postpartum (Olsson *et al.* 2005, Woolhouse *et al.* 2012). Incorporated in this was women's awareness of their partner's sexual desire, women did not want to 'hurt their partner's feelings' by regularly refusing their partner's sexual advances. It was reported that women managed this by engaging in sexual intercourse when they felt no desire (O'Reilly *et al.* 2009, Woolhouse *et al.* 2012), with some pretending they felt sexual desire and had an orgasm (Olsson *et al.* 2011).

Women identified that being affectionate with their partner was important to them (Olsson *et al.* 2005, Ahlborg & Strandmark 2006, Trutnovsky *et al.* 2006, Woolhouse *et al.* 2012), with

some (Woolhouse *et al.* (2012) describing how affection and emotional intimacy with their partner was negatively affected as a result of the decrease in sexual activity since the birth. The interviews carried out by Olsson *et al.* (2005), Woolhouse *et al.* (2012) and Martínez-Martínez *et al.* (2017) were specifically to explore women's experiences of their sexual health after birth. A common theme in the three studies was the changed priority given to sexual activity since the birth. Baby care, the relationship with the baby and the desire for sleep and alone time were for many women of greater priority than engaging in sexual activity with their partner. Additionally, all three described women's need for reassurances and timely information from a healthcare professional about possible changes to their sexual health and intimate relationship post birth.

2.4.8.2 Summary of women's perspective on postpartum sexual health

The narrative from the qualitative data has demonstrated firstly, that there are several influencing factors on postpartum sexual health. These factors can be summarised as: psychological, physical and relational factors (Figure 2.4). Secondly, the experience of postpartum sexual health was fraught with emotional conflict; feelings of guilt and failure were experienced. Mismatched sexual desire with their partner was of concern to women and a new lower priority was given to sexual activity compared to its priority in the relationship before pregnancy.

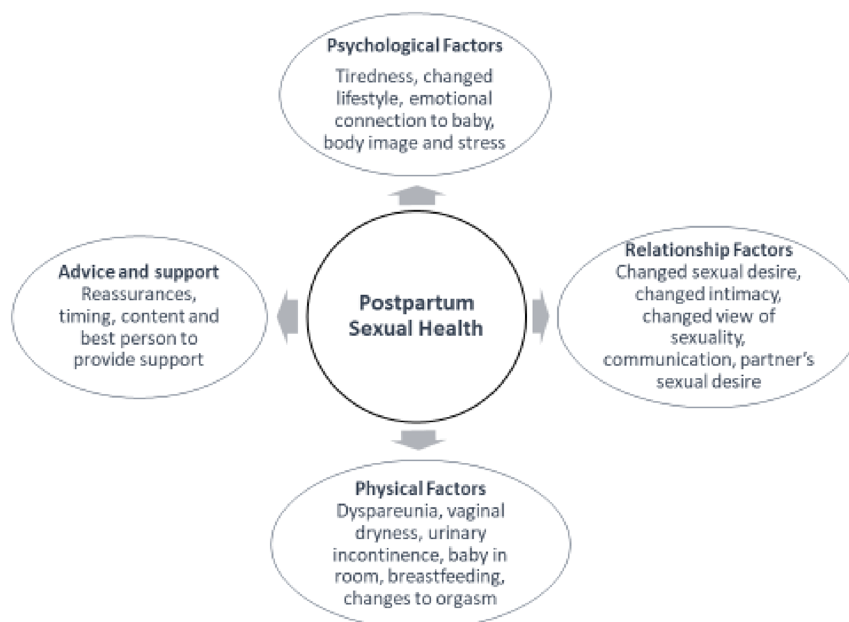

Figure 2.4 Themes related to postpartum sexual health as identified from analysis of qualitative data

2.4.9 Help-seeking behaviour

Help-seeking behaviour is a complex decision making process instigated by a person as a result of a problem that challenges their personal abilities. More specifically, help-seeking behaviour for a health problem is defined as a problem-focused, planned behaviour involving interpersonal interaction with a selected healthcare professional (Cornally & McCarthy 2011). One might expect help-seeking behaviour of women with postpartum sexual health issues would have been explored in great depth, particularly when many of the included studies reported high prevalence rates of sexual dysfunction. However, this was not the case; women's help-seeking behaviour in relation to postpartum sexual health is given minimal attention in the literature. More commonly addressed is the support or lack of support that women receive about their postpartum sexual health from healthcare professionals. In this section women's help-seeking behaviour and the support they received from healthcare professionals are explored separately.

2.4.9.1 Help-seeking behaviour

Three studies included in this literature review addressed women's help-seeking behaviour for postpartum sexual health issues. Twenty-six women were interviewed about their help-seeking behaviour for pelvic floor morbidity (urinary, bowel and sexual problems) in the Netherlands (Buurman & Lagro-Janssen 2013). Women described not seeking help for their experienced morbidity, for several reasons. Women assumed that some pain is to be expected during sexual intercourse after birth and they recounted being embarrassed to ask their doctor or nurse about issues relating to sex. Women also described being more concerned about their babies' well-being than seeking help for issues that they assumed would self-resolve (Buurman & Lagro-Janssen 2013). In the same study women did describe talking to female friends and family as a means of getting advice and support for their postpartum morbidities. This provided reassurance that they were not alone in their experience. Nevertheless, women clearly identified that they were not given enough information about the potential impact of birth on the function of their pelvic floor and how that might in turn impact on their sexual health.

In a retrospective Q-method study twenty women in the UK partook in one-to-one qualitative interviews 12-18 months postpartum about their experience of persistent perineal and pelvic floor morbidity (Herron-Marx *et al.* 2007). Women then sorted a selection of thirty-six

statements, according to their agreement or disagreement with each statement that were developed from the themes identified in the interviews. Statements related to perineal pain, urinary, bowel and sexual problems and women's help-seeking behaviour. Women described insufficient support and services for their experience. Those who did seek help from a healthcare professional recounted their problems being dismissed as trivial. Women also talked about sexual intercourse after birth as being a 'taboo' subject, even with family and friends (Herron-Marx *et al.* 2007, p. 329). These findings were similar to those of Woolhouse *et al.* (2014) where women described talking to their partner and friends about sex and intimacy as difficult. This is interpreted as women being dependent on getting advice and support from their healthcare professional.

2.4.9.2 Support for postpartum sexual health

In an Australian study (McDonald *et al.* (2015a), one in four (297/1261) women reported that they were asked directly about their sexual health by their GP during the first three months postpartum; whereas only 14% were asked directly by the community nurse. Barrett *et al.* (2000) reported that after birth in England, 96% of 484 women said that someone talked to them about contraception, 29% had a discussion on resuming sexual intercourse and 18% were advised about possible changes or problems they might experience. Of the 377 women who reported a postpartum sexual health issue three months after birth, just 15% (n=49) discussed it with a health professional, generally their GP (Barrett *et al.* 2000). Correspondingly, of the 22% (n=208) of women in Scotland who stated they had problems with sexual intercourse, 8% (n=17) felt they had not received adequate help (Glazener 1997). This corresponds with the qualitative narrative reviewed, where women wanted more information about how birth could impact on their sexual health (Olsson *et al.* 2005, Williams *et al.* 2005, O'Reilly *et al.* 2009, Woolhouse *et al.* 2012). Women also wanted reassurance from a healthcare professional that some changes to sexual health could be considered normal and were experienced by many women (Olsson *et al.* 2005, Woolhouse *et al.* 2012, Martínez-Martínez *et al.* 2017).

Although the research carried out by Glazener (1997) and Barrett *et al.* (2000) is dated, they are some of the very few to include measurement of support offered to women in relation to their experience of sexual health issues. It is unclear from their papers, however, if women were asked directly by a healthcare professional or whether they sought out support. The researchers' own commentary offers some discourse on the issue and possible reasons for the

evident lack of support women received; women may anticipate there will be some element of sexual morbidity after birth and therefore do not actively seek out support and information. Women may perceive sexual health issues to be minor or self-limiting, they may be embarrassed by the sensitive nature of the problem or a perceived lack of interest from the health professional (Glazener 1997). Barrett *et al.* (2000) suggests that the timing of the last contact for women regarding their own postpartum health, at six weeks, is too early for women to have identified problems and this influenced the lack of professional support women were given for sexual health issues three months after birth.

Women interviewed by Herron-Marx *et al.* (2007) suggest that postnatal care is not inclusive of perineal health issues, indicating that healthcare professionals did not directly enquire about their pelvic floor during postpartum consultations. Herron-Marx *et al.* (2007) suggest that postpartum perineal and pelvic floor morbidity are potentially invisible to society and healthcare professionals, and if women don't tell and healthcare professionals don't ask, the culture of silence continues. In Woolhouse *et al.* (2014), women were also unhappy with the lack of information and support they received from their healthcare professional about potential changes to their intimate relationship. They felt that if they had been better prepared they would have adapted to the changes experienced more smoothly.

2.4.9.3 Practitioner responses to perinatal sexual health

Practising midwives in Sweden, who recognised the importance of including discussions on sexual life after birth with women, identified a number of barriers to doing this in a meaningful way. These included time restrictions, a task-orientated approach to postnatal care and a professional lack of knowledge on sexual health matters (Olsson *et al.* 2011). Research from other disciplines agrees: while recognising the importance of discussing sexuality and intimacy with cancer patients in Australia, health professionals found these sensitive conversations personally confronting (Hordern & Street 2007). This led to mismatched expectations between patients and health professionals and unmet patient needs in communication about sexuality and intimacy (Hordern & Street 2007).

2.5 A concept analysis of postpartum sexual health [6]

In light of the lack of a clear definition of postpartum sexual health in the reviewed literature, I conducted a formal concept analysis so as to provide a more rigorous, in-depth analysis of the concept of postpartum sexual health and explore if postpartum sexual health meets the criteria of a well-developed and understood concept.

2.5.1 Choosing a concept analysis framework

In preparation for and in choosing an appropriate framework to guide an analysis of postpartum sexual health, I firstly examined a variety of established frameworks (Rodgers 1989, Walker & Avant 1995, Morse *et al.* 1996b, Rodgers & Knafl 2000, Penrod & Hupcey 2005b, Walker & Avant 2005, Chinn & Kramer 2011). Additionally, examples of published concept analyses were reviewed (Steis *et al.* 2009, Hermansson & Martensson 2011, Smith *et al.* 2012, Bicking Kinsey & Hupcey 2013, Schick Makaroff 2013).

Morse *et al.* (1996a) offer an approach to concept analysis that examines the 'maturity' of a concept as a means of clarifying it. They propose the use of rich data sources and provide criteria on which to base the analysis. A concept is considered mature if it is well defined, has distinct characteristics, has delineated boundaries, has clearly outlined preconditions and outcomes and there is agreement on its use (Morse *et al.* 1996b). This framework provided the foundations for what has become the 'principles-based' approach to concept analysis which was subsequently described by Penrod & Hupcey (2005b). Using a principles-based approach, a concept is examined under four philosophical principles in order to determine its comprehensive meaning. These are epistemological, pragmatic, linguistic and logical principles. Penrod & Hupcey (2005b) maintain that concept advancement is the purpose of a concept analysis, whereby a concept is not viewed as static rather it is viewed as dynamic and changing over time. This framework is used to analyse scientific conceptualisations of the concept under examination to reveal a best estimate of its probable truth (or state of science) at that point in time. Once the existing state of science, that is, the scientific literature, has been analysed and clarified the concept is advanced through a synthesis of new emergent insights. In deciding on the most appropriate framework to guide the current analysis, Penrod and Hupceys' (2005)

[6] This section forms the basis of the following publication: O'Malley D., Higgins A. & Smith V. (2015) Postpartum Sexual Health: A Principle-Based Concept Analysis. *Journal of Advanced Nursing* **71**(10), 2247-2257.

framework was chosen as the favoured approach as it provides a means of determining a deeper clarity and understanding of postpartum sexual health that would potentially be limited when using alternative frameworks. In using this method, the collection of peer-reviewed scientific literature from all disciplines that are considered related to the concept of interest is called for. This literature becomes the 'data' for the analysis and is examined under the four broad philosophical principles.

2.5.2 Literature search

Principles-based concept analysis requires that evidence (data) is collected only from scientific literature, and that this evidence is then used to answer the questions posed under each of the four principles; epistemological, pragmatic, linguistic and logical principles (Penrod & Hupcey 2005b). However, postpartum sexual health is complex and broad in scope, and needs to be considered beyond measurable outcomes of biological function. For this reason, an examination of the concept beyond the scientific literature is required. To deepen and ensure that a comprehensive analysis of postpartum sexual health was achieved, I adapted Penrod and Hupcey's (2005) framework to include theoretical and philosophical literature. An initial scoping search of the term 'postpartum sexual health' provided between 2000 and 3000 citations across a variety of electronic databases. In browsing these titles and abstracts it appeared that many key seminal studies of which I was aware were not being captured. This indicated a necessity to develop a detailed search strategy using carefully chosen key words so that I could be reassured that all of the relevant literature would be identified. A detailed description of the search strategy is outlined in Appendix 1. The final dataset consisted of ninety-one papers and three textbooks addressing postpartum sexual health.

2.5.3 Data extraction

As part of the data extraction process each included paper was read once and then a second time. On the first reading, however, it became apparent that managing a dataset of this size would prove challenging when attempting to extract relevant data to each of the four principles. In an attempt to overcome this, I specifically searched for a coherent and structured way to extract data by reviewing published concept analyses to determine how others had managed their dataset (Ruel & Motyka 2009, Smith *et al.* 2012, Bicking Kinsey & Hupcey 2013). Ruel & Motyka (2009) using the principles-based approach for their concept analysis on advanced nursing practice, developed a Data Extraction Sheet specifically for this purpose.

This provided a template for use in the current concept analysis and I adapted it, and referred to it as a Data Identification Form for the purposes of my data extraction activity (see Appendix 3). During the second reading of each included paper, I completed a Data Identification Form by populating it with the relevant data from each paper. Using this document, however, proved very restrictive and having used it with eight papers I found that the criteria were narrow, providing limited room to expand on ideas or develop arguments (Appendix 3). Additionally, I realised that it would be unhelpful as a reference tool as space for page numbers only was allowed for, not statements, definitions or descriptions. As a result of this and to overcome these limitations, I further adapted the Data Identification Form. This penultimate form allowed for identifying, extracting and describing specific types of data (e.g. clear definition of the concept, usefulness for practice or research, etc.,) and where these data were located in the individual text (e.g. page number, Table, Figure, etc.,) under the four broad philosophical principles (Appendix 4).

2.5.4 Rigour in data extraction

A pilot test was undertaken to determine the rigour and reliability of the Data Identification Form and to further determine if I needed to make changes to the document prior to final data extraction. This pilot comprised of my two PhD supervisors and I reading three papers twice and independently completing the Data Identification Form for each paper. Once complete the results were compared using Cohen's Kappa to calculate the percentage agreement on extracted data for each paper; that is, agreement on the types of data that were extracted against principle type (epistemological, pragmatic, linguistic and logical). The results revealed that my supervisors had a 74% inter-rater agreement on their extracted data. Agreement between me and each of my supervisors, however, was less, with a 44% agreement with supervisor 1 and a 42% agreement with supervisor 2. A meeting was arranged and a lengthy discussion of the results took place. During this discussion it became apparent that I was examining the principles in a very broad manner, whereby I was inclined to make data 'fit' into the principles, when in fact the data were not meeting the principle or doing so in a very limited way. I was also inclined to examine the usefulness of the data for clinical practice from a methodological and methods perspective rather than whether the findings actually contributed to clinical practice in any meaningful way. It was also apparent that if other concepts were mentioned I tended to consider this some form of theoretical integration, when in reality mere mention of a related concept did not provide sufficient evidence of theoretical integration. Similarly, reference to a concept, such as quality of life, did not require

consideration as it was not relevant to the concept under examination. As a result of the pilot test, the Data Identification Form was adapted a final time to include a column for 'other concepts mentioned' (Appendix 5) and I altered my approach to examining the data based on discussion, learning and consensus.

The learning from the data extraction and piloting process was invaluable. I became better equipped to make decisions as to whether or not the principles were being met. I also commenced note-taking during data extraction in order to remain true to this learning. Notes were organised, for example, by grouping data by years: 1970-1980, 2001-2005, 2006-2010, 2010-present (2013). This was initially by ten-year grouping, but as the volume of relevant literature grew in the 2000s, this was reduced to a five-year grouping. Notes also included comments about language used, preferred methodologies, number of studies retained or excluded and the rationale for these decisions (Appendix 6).

The process of developing the Data Identification Form, piloting the form, and the discussion that took place and the note-taking that followed during data extraction all enhanced and demonstrated rigour in the conduct of this concept analysis. Additionally, it adds to methodological advancement in conducting a principle-based concept analysis by providing clear signposting of decisions made when extracting data. This signposting will allow experts to critique and offer opinion on the value of the findings of the concept analysis and its contribution to theory development. Ultimately, this advancement in methodological rigour offers a guide to others who might be considering undertaking a concept analysis in the future.

2.5.5 Results

2.5.5.1 Epistemological principle

The epistemological principle involves determining if the concept has been clearly defined and well differentiated from other concepts (Penrod & Hupcey 2005b). The term postpartum sexual health is mentioned rarely in the included papers, but the closely related terms of postpartum sexuality and postpartum sexual function are commonly described and are conceptually inferred to describe postpartum sexual health from an epistemological perspective. Many of the included papers do not offer a definitive definition of sexuality, rather they simply state its importance (Pastore *et al.* 2007, Woolhouse *et al.* 2012, Woolhouse *et al.* 2014). Most papers mirror the definitions previous outlined and identify the

complex factors that influence sexuality, such as biological, psychological and social factors (Salim 2010) (section 2.2.1.1). Whilst others focus on behaviours such as sensuality (tenderness between lovers, kissing, hugging and cuddling), touching of genitals and coitus which are said to embody postpartum sexuality (Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Ahlborg *et al.* 2008). The WHO definition of sexuality is reflected in some of the included papers (Trutnovsky *et al.* 2006, Acele & Karaçam 2012).

Sexual function is a recurring theme in the papers and is seen as a component of postpartum sexual health as evidenced by the sexual health outcomes that are repeatedly measured: sexual desire, sexual arousal, vaginal lubrication, orgasm, satisfaction with sexual life and pain during sex (Baksu *et al.* 2007, Dean *et al.* 2008, Pauls *et al.* 2008, Klein *et al.* 2009, Doumouchtsis *et al.* 2011, Acele & Karaçam 2012, Hosseini *et al.* 2012, Leeman *et al.* 2016). Other aspects of sexual function continually measured are frequency of sexual intercourse (Baksu *et al.* 2007, Pauls *et al.* 2008, Safarinejad *et al.* 2009, Chivers *et al.* 2011) and timing of resumption of sexual intercourse post birth (Safarinejad *et al.* 2009, Chivers *et al.* 2011, McDonald & Brown 2013). This diverse use of methods to describe sexual function highlights the challenge in clearly defining and clarifying the concept of postpartum sexual health. Similarly, the dysfunction, problem and ill-health positioning of research results and discussions on sexual function adds to this challenge. Morof *et al.* (2003), Barrett *et al.* (2000), Barrett *et al.* (2005) and Lee & Yen (2007) used the language of postpartum sexual health but add little epistemological insight as a definition of postpartum sexual health is lacking and they use the aforementioned sexual function measures.

Research from the qualitative paradigm has enabled broader conceptualisation of the concept as these studies examined the concept from a more embodied approach capturing women's perspective and experiences. The complex features identified from these papers parallel those seen in the review of women's experience of their postpartum sexual health (Section 2.4.8). They are social, psychological and relational dimensions of postpartum sexual health (Olsson *et al.* 2005, Trutnovsky *et al.* 2006, Woolhouse *et al.* 2012, (DeJudicibus & McCabe 2002, von Sydow 2002, Pastore *et al.* 2007, Hipp *et al.* 2012).

In summary, the concept of postpartum sexual health from an epistemological perspective is superficially explored with emphasis in the main being on the physical/biological dimension (arousal, lubrication, orgasm, dyspareunia) assessed primarily through the use of formal measurement scales. The social (adapting to parenthood, changed roles), psychological

(perception of body image, desire, fear, worry and anxiety), relationship (emotional and practical support, perception of sexual desire in partner and changed roles) and the pleasure and health dimensions of postpartum sexual health are currently under-developed.

2.5.5.2 Pragmatic principle

The pragmatic principle is concerned with the application and usefulness of the concept (Penrod & Hupcey 2005b) and in the current analysis, in describing postpartum sexual health as encountered in maternity practice. Analysis of the data revealed that postpartum sexual health is not easily recognised by health professionals or women in clinical practice, an unexpected finding considering the surge in publications on women's postpartum sexual health in the past fifteen years. There is strong evidence that many women who experience sexual health issues in the months after birth do not talk to a healthcare professional about their experience (Section 2.4.9.2). Women are not directly asked by healthcare professionals about their sexual health after birth (O'Reilly *et al.* 2009, Woolhouse *et al.* 2012, Woolhouse *et al.* 2014, McDonald *et al.* 2015a). Yet, women have identified an absence of advice and reassurance from their midwife regarding sexual health (Olsson *et al.* 2005). Similarly, midwives felt that postpartum sexual health was an important issue that ought to be addressed prior to discharge from maternity services, but many felt challenged to incorporate it in a real way in their care provision (Olsson *et al.* 2011).

Postpartum sexual health is absent from midwifery curricula and neglected in the core midwifery text books (Fraser & Cooper 2009, Macdonald & Johnson 2017). It gets scant mention by NICE in their Postnatal Care Clinical Guideline (NICE 2013) and then only in relation to dyspareunia and resuming sexual intercourse. Several studies included in this analysis make token recommendation for a postnatal consultation on the potential for change to sexual health after birth (LaMarre *et al.* 2003, Trutnovsky *et al.* 2006, Williams *et al.* 2007, Citak *et al.* 2010, Rathfisch *et al.* 2010, Marsh *et al.* 2011, Palm *et al.* 2013). However, they do not indicate the optimal timing of the consultation, the content of the consultation, who is best placed to facilitate the discussion and with whom the discussion should be held, that is, with the woman only or the woman and her partner. Neither do the recommendations specify what actions midwives should take in developing competence in leading these consultations, in providing sexual health education, and in advising women on what evidence-based actions to take if sexual health problems persist. Acknowledging this lack of recommendations, some meaningful application of the concept to clinical practice was identified in the dataset. For

example, early and individualised (that is, tailoring the information to the woman's specific circumstances) education on possible changes to sexual health, insomuch as consultations take place prior to discharge from maternity services, was highlighted (Rogers *et al.* 2009, Priddis *et al.* 2013). This indicates that perhaps some thought is being given to the applicability of postpartum sexual health to clinical practice; as yet, this consideration is minimal.

The over-reliance on measurement tools for determining postpartum sexual health in clinical practice is significant. Sixty-four of the ninety-one papers included in this analysis used some form of measurement tool or scale. As discussed in Section 2.4.7, the appropriateness of using measurement tools with a biophysical emphasis to measure the sexual health of postpartum women is questionable.

2.5.5.3 Linguistic principle

The linguistic principle involves analysing whether consistency in use and meaning of the concept are maintained. This includes an analysis of whether the concept fits the context within which it is being linguistically used (Penrod & Hupcey 2005b).

Inconsistencies in linguistic use are evident as the term postpartum sexual health was often used interchangeably with postpartum sexuality (Hyde *et al.* 1996, von Sydow 1999, Barrett *et al.* 2000, DeJudicibus & McCabe 2002, Rowland *et al.* 2005, Trutnovsky *et al.* 2006, Pastore *et al.* 2007, Salim *et al.* 2010, Shirvani *et al.* 2010, Hipp *et al.* 2012, Woolhouse *et al.* 2012) and postpartum sexual function (Baksu *et al.* 2007, Pauls *et al.* 2008, Klein *et al.* 2009, Safarinejad *et al.* 2009, Citak *et al.* 2010, Baud *et al.* 2011, Chivers *et al.* 2011, Hosseini *et al.* 2012). This is further exacerbated by the lack of definitions and the multiplicity of issues addressed within this body of literature. For example, both Hipp *et al.* (2012) and Shirvani *et al.* (2010) equate sexuality with sexual desire. Sexual satisfaction (Rowland *et al.* 2005), the importance of sexual intercourse, tenderness and satisfaction with sexual life (Trutnovsky *et al.* 2006) are also features embedded within sexuality. Yet use of the term postpartum sexual health is adopted by Chang *et al.* (2011), Acele & Karaçam (2012) and Hosseini *et al.* (2012) in their examination of sexual desire. Furthermore, the resumption of sexual intercourse post birth (Radestad *et al.* 2008, McDonald & Brown 2013) is explored within the terminology of postpartum sexual health.

A similar observation is made when examining the use of the term sexual function. Many included studies, in exploring postpartum sexual function as an aim, proceed to measure sexual arousal, desire, vaginal lubrication, satisfaction, orgasm and dyspareunia (Baksu *et al.* 2007, Pauls *et al.* 2008, Klein *et al.* 2009, Safarinejad *et al.* 2009, Citak *et al.* 2010, Chivers *et al.* 2011, Hosseini *et al.* 2012). Timing of resumption of sexual intercourse post birth, the frequency of sexual activity (Signorello *et al.* 2001, van Brummen *et al.* 2006, Gungor *et al.* 2007, Rogers *et al.* 2009, Marsh *et al.* 2011) and the influence of fatigue on sexual activity (Glazener 1997, Rogers *et al.* 2009) are also said to encompass postpartum sexual function. These measures are common to those addressed by Barrett *et al.* (2000) and Morof *et al.* (2003) who use the language of postpartum sexual health. The overriding impression is that while sexual function may be the key term used, it is reasonable to conclude that aspects of postpartum sexual health are being investigated.

Researching postpartum sexual health is fraught with challenges relating to the length of time after birth when women are asked about their sexual health experiences. A timeframe of six weeks post birth is potentially premature when it has been reported that over 60% of women have not resumed any form of sexual activity by this time point (Barrett *et al.* 2000, Barrett *et al.* 2005, McDonald & Brown 2013). Three months is a commonly used timeframe (Labrecque *et al.* 2000, Rogers *et al.* 2009, Rathfisch *et al.* 2010, Marsh *et al.* 2011), as are six months (Trutnovsky *et al.* 2006, Baksu *et al.* 2007, Pauls *et al.* 2008) and twelve months (Williams *et al.* 2007, Bertozzi *et al.* 2010, Bertozzi *et al.* 2011). The more questionable times reported are three days (Chang *et al.* 2010), fourteen days (Connolly *et al.* 2005), 2.5 -3.5 years (Woolhouse *et al.* 2012) and six years (Baud *et al.* 2011). As identified in the literature review, there are disadvantages to exploring sexual health too soon after birth. And there are inherent disadvantages to the longer timeframes also (Section 2.4).

The concept of postpartum sexual health may be considered partially linguistically developed, albeit, mainly when allowing for the consistency in implied meaning by the use of the terms sexuality, sexual function and sexual health. Also for the most part, regardless of the postpartum timeframes used by researchers they remain relevant contextually to postpartum sexual health.

2.5.5.4 Logical principle

The logical principle investigates whether the concept can hold its boundaries when theoretically integrated with related concepts (Penrod & Hupcey 2005b). Analysis of these data has revealed that conceptual boundaries for postpartum sexual health, sexuality and sexual function are inconsistent and blurred. Uncertainty due to the constant interplay between these terms and postpartum sexual health throughout make it impossible to separate these concepts when attempting to encapsulate the concept of postpartum sexual health. This is exacerbated further by the lack of theoretical definitions and by the variety of outcomes measured in the data.

Other concepts that have featured in the data, albeit less commonly, are sexual satisfaction, intimacy, sexual relationships, sexual problems, sexual enjoyment and sexual activity. These are components of postpartum sexual health rather than theoretically integrated concepts. Sexual satisfaction is frequently measured in the data as an indicator of sexual health (Dean *et al.* 2008, Baud *et al.* 2011, Acele & Karaçam 2012, Hosseini *et al.* 2012). The importance of tenderness among couples, sexuality and sensuality are identified as factors that influence the quality of the intimate relationship after birth by Ahlborg *et al.* (2005). Intimacy has been discussed in terms of the intimate relationship and how it can impact on sexual health, for example, discordance in sexual desire between partners (Pastore *et al.* 2007). Barrett *et al.* (2000) claims to investigate sexual health, yet focuses and report on dysfunctions; while Acele & Karaçam (2012) indicate that their aim is to identify sexual problems by using the ASEX scale. Sexual activity in terms of frequency of sexual intercourse (Rathfisch *et al.* 2010, Chivers *et al.* 2011), type of sexual activities and tenderness have all been included as aspects of postpartum sexual health (von Sydow *et al.* 2001, von Sydow 2002, Ahlborg *et al.* 2005).

This lack of clear conceptual boundaries between postpartum sexual health, sexuality and sexual function complicates the development of a theoretical definition. Whether postpartum sexual health can hold its own as a single theoretical concept is questionable and, presently, it must be concluded that postpartum sexual health is not logically mature.

2.5.6 Conceptual components

This concept analysis reveals that there is an unquestionable lack of a precise definition of postpartum sexual health from the epistemological perspective. Linguistic inconsistencies

abound, and logically the concept has blurred boundaries with sexuality and sexual function. Pragmatically there is evidence of some potential utility in midwifery practice. Despite these findings the conceptual components of postpartum sexual health that have been identified can be organised to include antecedents, attributes and outcomes.

2.5.6.1 Antecedents

Use of 'health' in postpartum sexual health has positive connotations of well-being and being free from illness. Therefore, antecedents to postpartum sexual health must consist of factors that contribute to being a sexually healthy person after birth. The scientific literature has identified factors, albeit for heterosexual women, that increase the likelihood of being sexually healthy after birth as an instrument-free birth (Thompson *et al.* 2002, Buhling *et al.* 2006, Bertozzi *et al.* 2010), an intact perineum (Williams *et al.* 2007, McDonald & Brown 2013), avoidance of an episiotomy (Rathfisch *et al.* 2010), and being free of a OASI (Rathfisch *et al.* 2010, Marsh *et al.* 2011, Priddis *et al.* 2013). There is some inference that caesarean section is protective of sexual health, however, compared with vaginal birth, this safeguard was short term only (three months) (Barrett *et al.* 2000) and non-existent at twelve months postpartum (Barrett *et al.* 2000, Klein *et al.* 2009).

A positive personal perception of one's body image was associated with increased sexual desire (Pastore *et al.* 2007), sexual activity initiation and intimacy satisfaction (Olsson *et al.* 2005, Mickelson & Joseph 2012). It has been argued that breastfeeding could compromise sexual health, as breastfeeding women have reported experiencing vaginal dryness, dyspareunia, increased nipple sensitivity, leaking milk and decreased arousal as a result of low postpartum oestrogen levels (Connolly *et al.* 2005). An absence of fears and anxieties and being in a supportive relationship where the couple work together as a team and communicate effectively about their sexual desires and personal needs too are said to be factors that contribute to postpartum sexual health (Ahlborg *et al.* 2005, Olsson *et al.* 2005, Pastore *et al.* 2007).

2.5.6.2 Attributes

Several attributes to postpartum sexual health were identified in the analysis. The various tools and scales used in the included studies took into account physical and, to a lesser extent, psychological dimensions to postpartum sexual health. In this sense, sexual arousal, sexual

desire, vaginal lubrication, orgasm, sexual satisfaction and the absence of dyspareunia, are considered attributes of postpartum sexual health (Baksu *et al.* 2007, Dean *et al.* 2008, Pauls *et al.* 2008, Klein *et al.* 2009, Safarinejad *et al.* 2009, Citak *et al.* 2010, Chivers *et al.* 2011, Doumouchtsis *et al.* 2011, Hosseini *et al.* 2012). Resuming some form of sexual activity post birth features as a characteristic of postpartum sexual health (Safarinejad *et al.* 2009, Chivers *et al.* 2011), with the majority of women (83%) having done so by twelve weeks after birth (McDonald & Brown 2013). Frequency of sexual intercourse was also considered as a feature of postpartum sexual health (Baksu *et al.* 2007, Pauls *et al.* 2008, Safarinejad *et al.* 2009, Chivers *et al.* 2011); however, this association was underdeveloped as no study clearly defined frequency levels as determinants of what would be considered 'good' sexual health. Tenderness between lovers: kissing, hugging and cuddling were also evident as attributes of postpartum sexual health (Ahlborg *et al.* 2000, Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006).

2.5.6.3 Outcomes

Outcomes of postpartum sexual health include sexual satisfaction (Dean *et al.* 2008, Acele & Karaçam 2012, Hosseini *et al.* 2012) and a satisfying intimate relationship with one's partner (Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Pastore *et al.* 2007, Hipp *et al.* 2012). Positive aspects of an intimate relationship go beyond the physical dimensions of sexual health, but include outcomes such as working well as a couple and sharing parenting and household responsibilities (Olsson *et al.* 2005, Hipp *et al.* 2012, Woolhouse *et al.* 2012). Furthermore, 'good' postpartum sexual health impacts positively on the intimate relationship and, in turn, positively effects how parents adapt to parenthood and their new roles as care-givers (Olsson *et al.* 2005, Woolhouse *et al.* 2012).

A positive perception of one's body image identified as an antecedent to postpartum sexual health also emerged as an outcome of postpartum sexual health. Pauls *et al.* (2008) suggested that women who had postpartum sexual health problems or had low sexual function scores also experienced less satisfaction with their body image. Both women and men identified how a woman's perception of her body image affected their sexual health as a couple for up to twelve months after birth (Pastore *et al.* 2007) (Mickelson & Joseph 2012), implying postpartum sexual health consequently leads to feelings of confidence with one's body and self.

2.5.7 Theoretical definition

Within the empirical research postpartum sexual health is too closely intertwined with the concepts of sexuality and sexual function to enable determination of a stand-alone theoretical definition. The concept analysis has enabled a greater understanding of the concept. In keeping with Penrod & Hupcey (2005a) aim of concept advancement, the multi-dimensional nature of postpartum sexual health was revealed in this analysis.

2.6 Summary and conclusion for Chapter 2

Conclusions are difficult to make following this review of the literature on postpartum sexual health; variable sample sizes, retrospective study designs, inconsistent use of language, use of unvalidated measurement tools for use on pregnant/postpartum women and varying postpartum timeframes all make conclusions problematic. Nonetheless, it can be said most women have resumed sexual intercourse by twelve weeks postpartum. Dyspareunia is experienced by many in the short term, that is, three to six months, and for most, it has resolved by twelve and eighteen months after birth. Satisfaction with the sexual relationship is decreased during the first year after birth and discordance in sexual desire is known to affect sexual and relationship satisfaction. Mode of birth and degree of perineal trauma did not impact on sexual health in the long term, that is, after one year after birth, except possibly in the case of OASI. Breastfeeding, depression and a poor perception of one’s body image negatively impacted on women’s postpartum sexual health. A number of factors thought to support sexual health included good communication with partner, adapting to new roles, sharing responsibilities, being prepared for changes to sexual health and including other aspects of intimacy such as touch and kissing in the relationship.

The concept analysis demonstrated that epistemologically, the heavy reliance on measurement tools minimises the maturity of the concept. The tools used were not designed for postpartum women and the outcomes measured had a sexual dysfunction perspective that did not enable an embodied viewpoint of postpartum sexual health to emerge. Data from the narrative paradigm added depth to this part of the analysis by bringing forward the notion that postpartum sexual health encompasses more than physical and psychological dimensions; rather that additional social and relational aspects are fundamental to understanding the concept. While a clear definition of postpartum sexual health remains elusive, the concept incorporates physical dimensions (arousal, lubrication, orgasm, dyspareunia), social

dimensions (adapting to parenthood, changed roles), psychological dimensions (perception of body image, desire, fear, worry and anxiety) and relationship dimensions (emotional and practical support, perception of sexual desire in partner and changed roles). The surge of interest in sexual health after birth since the 2000s, as evidenced from the dates of publication of the included studies, might lead one to believe that postpartum sexual health would be pragmatically well developed. This however was not the case. Little effort to apply the findings of research to midwifery practice was found and both women and midwives identified this. Unfortunately there is limited evidence from midwives' perspectives on how they incorporate postpartum sexual health education into their practice and their knowledge and competence in this area of practice is lacking. This finding made me cognisant during the one-to-one interviews with women, undertaken in Phase 2 of this study (see Chapter 3), that our conversation might have been the first these women had with someone regarding their sexual health since the birth of their baby. It enabled me to develop a sensitive interview schedule and informed probing during the interview as regards the support and information women were given from health professionals concerning their sexual health.

When addressing the linguistic principle it was necessary to rely heavily on implied meaning, particularly the implied meaning attached to postpartum sexual health, sexuality and sexual function. Data in this analysis most frequently used the language of sexuality and sexual function; it was through examination and interpretation that it emerged that the three terms were used interchangeably and had shared meaning. This too led to the conclusion that, logically, postpartum sexual health could not be theoretically separated from sexuality and sexual function.

Chapter 3 Methodology

3.1 Introduction

This chapter considers approaches to, and rationale for, mixed methods enquiry. It provides justification for the mixed methods explanatory sequential design with connected integration used to address the study's aim and objectives. An outline of the study's paradigm and the philosophical underpinnings of the methodological choices that were made are described. The methodology, including study design, is discussed and a detailed description of the methods adopted for the study is provided.

3.1.1 Aim and objectives

The research aim is to identify the prevalence and experience of sexual health issues in nulliparous women in Ireland antenatally and up to twelve months postpartum. The research objectives for the study are as follows:

i. To identify the existence, extent and prevalence of sexual health issues antenatally and up to twelve months postpartum.
ii. To identify potential risk factors for postpartum sexual health issues.
iii. To explore women's experience of sexual health issues and how it affects their lives.
iv. To explore women's experiences regarding the impact of their perception of their body image on their postpartum sexual health.
v. To explore health service-seeking behaviours of women with regard to their postpartum sexual health.

3.2 Philosophical underpinning - Pragmatism

Researchers are urged to locate their research in a selected paradigm (Creswell 2013). A paradigm refers to a set of ontological and epistemological assumptions, that is a set of shared beliefs about the nature of the (social) world and about the knowability of this world (Denscombe 2008). A paradigm is often referred to as 'world view' (Morgan 2007). In research, Hanson and colleagues suggest that a paradigm is defined by distinct elements including; epistemology (how we know what we know), axiology (values) and methodology (the process of research) (Hanson *et al.* 2005). In simple terms, paradigm differences influence how we know what we know, how we interpret reality and how we study (methodology) the research questions we ask. Tashakkori & Newmab (2010) argue that it is crucial for researchers to

recognise the influence that culture, worldview and socio-political contexts may have on the research project. Discussion on the paradigm that underpins this study is structured using a model adapted from Crotty's levels of developing a research study (Crotty 1998) (Figure 3.1).

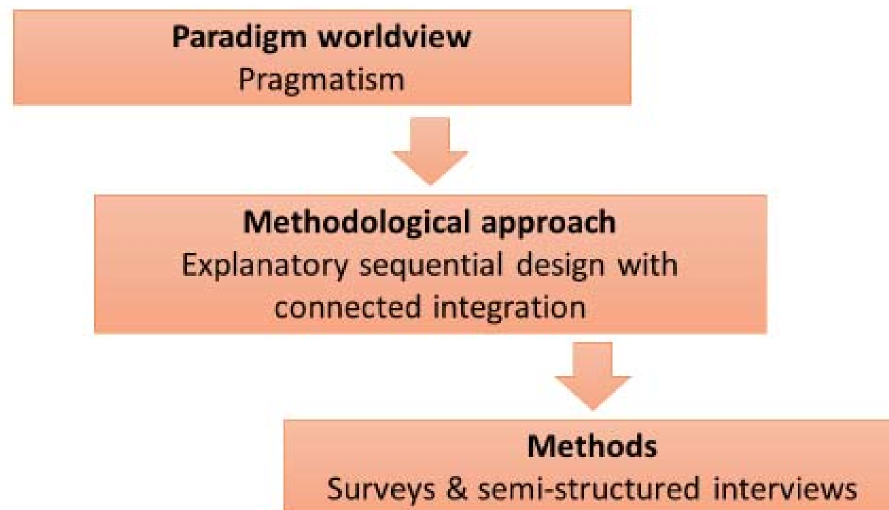

Figure 3.1 Study paradigm, methodology and methods overview (adapted from Crotty 1998)

The philosophical underpinning of this study is pragmatism. Pragmatism is recognised as the philosophical basis for most mixed methods research and guides many mixed methods researchers (Patton 1990, Hanson *et al.* 2005, Teddlie & Tashakkori 2009, Tashakkori & Teddlie 2010, Creswell & Plano Clark 2011). It arose initially as a 20th century philosophy. John Dewy, William James and Charles Sanders are considered the three main philosophers who defined and developed early pragmatism. They argued that pragmatism was an outcomes and consequence-focused philosophy, meaning that it is the *outcomes* of the enquiry that are paramount, valuing both objective and subjective knowledge (Biesta 2010). Pragmatism advances the notion that the consequences are more important than the process and therefore 'the ends justifies the means' (Morgan 2008, p. 57). It advocates the primary importance of the question asked rather than the methods used (Creswell & Plano Clark 2011). This enables the mixing of quantitative and qualitative approaches throughout the research process. For this reason, it is not difficult to see how pragmatism has gained considerable momentum as the paradigm of choice for mixed methods research (Greene & Hall 2010), with flexibility in combining different systems of reality appealing to mixed methods researchers (Dures *et al.* 2011).

Feilzer (2010) considers pragmatism in mixed methods research as a more 'grounded' approach to research, while Johnson *et al.* (2007) describe it as an attractive philosophy for integrating perspectives and approaches. Nevertheless, some argue that pragmatism is non-paradigmatic, that is, the researcher makes pragmatic decisions without making use of the foundations of pragmatism as a philosophy (Denzin 2010, Greene & Hall 2010, Denzin 2012). Morgan (2014) advocates moving beyond the narrow approaches that reduce pragmatism to simple practical issues and use its deeper philosophical perspective regarding the nature of reality, truth and knowledge. It is this meaningful understanding of pragmatism within which this study is grounded.

To illustrate how this research is situated within the pragmatic worldview, an examination of the tenets of the three research paradigms is presented. This is followed by a description of the key attributes of pragmatism and how they are reflected in this study. Creswell (2009) provides basic characteristics of three paradigms used in research, which is a helpful starting point when considering commonalities and differences within the paradigms.

Table 3.1 Basic characteristics of three paradigms in research (adapted from Creswell 2009)

Positivist	Constructivist	Pragmatic
Determination	Understanding	Consequences of actions
Reductionism	Multiple participant meanings	Problem-centred
Empirical observation measurement	Social and historical construction	Pluralistic
Theory verification	Theory generation	Real-world practice orientated

To fully understand pragmatism as it relates to this study one must examine pragmatism under 'dimensions of contrast' (Teddlie & Tashakkori 2009, p. 86). Five dimensions of contrast were originally developed by Lincoln & Guba (1985) to depict differences between the two research paradigms of constructivism and positivism: epistemology, axiology, ontology, the possibility of causal linkages and the possibility of generalisation. Christ (2013) however, has adapted this means of contrasting research paradigms to include:

- Ontology (what is the nature of reality?)

- Epistemology (what is the relationship between the researcher and that being researched?)
- Axiology (what is the role of values?)
- Methodology (what is the process of research?)

Each element is explored in relation to the conduct of this research and its pragmatic underpinning as a means of demonstrating what Morgan (2014, p. 1051) described as a 'coherent philosophy that goes beyond what works'.

3.2.1 Ontology

Ontologically, pragmatism argues for singular and multiple realities, that is, researchers test hypotheses and provide multiple perspectives (Creswell & Plano Clark 2011). Pragmatists agree with the positivist's notion of an existence of an external reality independent of our minds (Cherryholmes 1992). However, they diverge from positivists' view of 'truth' whereby pragmatists deny that truth regarding reality can actually be determined and doubt whether one explanation of reality is better than the other (Teddlie & Tashakkori 2009). Biesta & Burbules (2003) argue that everyone's experience is equally real and what is experienced is itself real when addressing pragmatism from an ontological perspective. Much of the theory on pragmatism in use today in social sciences research has evolved from John Dewey's theory of knowing, originally used within the educational context; in short, the meaning of human experience resides neither exclusively in the objective real world, nor exclusively in the internal mind of the knower, but rather in their interaction or transaction (Greene 2007, Feilzer 2010, Morgan 2014). Accepting this is fundamental to address the research objectives iii), iv) and v), which focus on women's perspectives. These research objectives are best achieved through the pragmatic ontological viewpoint because it supports recognition of each woman's experience of their sexual health, and allows an exploration of different realities of postpartum sexual health as described by women, recognising each reality as real and true to their own experience.

3.2.2 Epistemology

Epistemology is concerned with the relationship between the knower (researcher) and the known (participant). Positivists believe this relationship to be objective with a distinct separateness existing between the knower and the known. Constructivists, on the other hand, perceive the research to be subjective, that is, with the researcher and the participant working

together to co-construct social reality (Teddlie & Tashakkori 2009). Pragmatism challenges this by arguing that the relationship between the researcher and participants is neither objective nor subjective but lies on a continuum, where at some points during the research process a highly interactive relationship may be required to answer complex questions and at other points there may not be a need for interaction at all (Greene & Hall 2010). Dewey's transactional view of knowledge, believing it could not be viewed as exclusively objective or subjective but rather as an interaction between the two is fundamental to the epistemological stance of pragmatism (Greene & Hall 2010). Morgan (2007, p. 52) discusses the 'paradigm incompatibility' of combining quantitative and qualitative methods, with particular emphasis on irreconcilable processes of induction and deduction[7]. Methodological purists argue that researchers cannot be inductive and deductive simultaneously, yet in reality human reasoning is sufficiently complex and flexible (Patton 1990). In support of this, Morgan (2007) argues for a process of abduction which enables one to move back and forth between induction and deduction through the process of enquiry. Johnson & Onwuegbuzie (2004), in their arguments in support of pragmatism, suggest that rather than continuing the debate on incompatibility a focus on complementation should be put forward instead. They contend that taking a non-purist viewpoint allows researchers to design research studies which combine methods that will offer the best chance of answering their specific research question. Epistemologically, this study embraces pragmatism, insomuch as it has adopted a focus on practicality whereby data are collected by a 'what works' approach to address the research question (Johnson *et al.* 2007, Doyle *et al.* 2009, Creswell & Plano Clark 2011). Neither quantitative nor qualitative methods are sufficient by themselves to capture and detail women's postpartum sexual health, therefore, this study design has situated itself within the pragmatic paradigm which epistemologically supports the mixing of methods to answer the research question. Dewey proposes that enquiry methods must fit the questions posed, but more specifically, that methods also define the question just as the question defines the methods, that methods and questions are mutually constitutive (Greene & Hall 2010).

[7] This view of paradigm in the strictest sense expressed by Morgan (2007) resonates with the original work of Kuhn (1962) who argued that for a paradigm to exist the set of beliefs espoused must be incommensurable with beliefs associated with other paradigms, similar to that of positivism and constructivism.

3.2.3 Axiology

Stark differences in views on axiology exist between positivist and constructivist communities. Positivists, on the one hand, perceive enquiry to be value free, or unbiased, with researchers going to great lengths to eliminate bias. On the other hand, constructivists believe that enquiry is value bound, that is, bias is present and acknowledged (Creswell & Plano Clark 2011). Pragmatists, similar to the constructivist viewpoint believe that values play a large role in conducting research and in drawing conclusions from their research, but they accept this state of affairs. A pragmatic stance demands that values are situational and relative, both biased and unbiased, depending on the research design that is being used to answer the research question. For pragmatists, values and visions of human action and interaction precede a search for descriptions, theories, explanations and narratives. Values are thus not eternal, but they are created and if they are useful for the research endeavour their selection is deemed appropriate (Beatty *et al.* 2009). Teddlie & Tashakkori (2009) suggest that the pragmatist will decide what they want to study based on what is important to their personal value system. The topic is examined in an approach that is congruent with their value system, including variables they feel are most likely to produce interesting data. This description of researcher behaviour provided by Teddlie & Tashakkori (2009) is consistent with the way many researchers actually conduct their studies. Crucially, it is consistent with how this research evolved, which stemmed from a personal interest in sexual health after birth and my professional experience as a midwife. Collectively, these led to the research question; 'what is the prevalence and experience of sexual health issues in nulliparous women in Ireland antenatally and up to twelve months after birth?' Both biased and unbiased perspectives are included in this study, with bias recognised and acknowledged for what it brings to the design and interpretations of the study. For example, recognising my personal experience as a mother and a midwife, and using those experiences to demonstrate empathy and knowledge in issues relating to birth and life after birth while, simultaneously, taking great care not to allow my personal experiences to unduly influence data collection and analysis (Oakley 2000).

3.2.4 Methodology

Traditionally a forced choice between the positivist scientific model of research associated with a quantitative approach and the constructivist model associated with a qualitative approach must be made when considering methodology (Howe 1985). Yet, pragmatism facilitates combining quantitative and qualitative methods, mixing them and their data, in

order to answer the research question. Much has been written about the incompatibility of combining quantitative and qualitative methods (Howe 1985, Bryman 2006b, Morgan 2007, Sommer Harrits 2011), in particular, the argument that acceptance of one paradigm, and the ontological, epistemological, axiological and methodological assumptions associated with it, requires complete rejection of the other (Morgan 2007). Combining quantitative and qualitative methods pitches realism against relativism[8], and objectivity against subjectivity. Nevertheless, as seen above, pragmatic thinkers do not subscribe to the limitations or rules enforced by one paradigm or another, rather they believe that specific methods are exclusive to one particular paradigm (Yin 2006, Wenger-Trayner *et al.* 2017). Pragmatism offers an epistemological justification and logic, that is, the use of a combination of methods and ideas that helps best frame, address and provide tentative answers to one's research question for mixing approaches and methods (Johnson *et al.* 2007). Meeting the research objectives of this study required the use of quantitative and qualitative methodologies, and an integration of both. For example, the research objectives i) and ii) sought to determine the prevalence of sexual health issues and the factors associated with sexual health issues in first-time mothers. Quantitative methods are best suited to meet these objectives, derived from the positivist paradigm, where probability, a level of objectivity and approximated truth are sought (Crotty 1998). Objectives iii) to v) are concerned with women's experiences of sexual health issues, their health service-seeking behaviour and the influence of their perception of their body image. Thus qualitative methods are best suited to meet these objectives as they align with a constructivist paradigm where multiple realities are acknowledged and researchers seek to uncover the reality of others through the process of detailed description of their experience (Appleton & King 2002). Applying pragmatic philosophy to this research facilitates the selection of research methods emanating from different paradigms which ultimately allows the research aim and objectives to be met.

3.3 Study design – Mixed methods

Mixed methods research is described as the 'third methodological movement', with quantitative and qualitative methodologies being the other two (Teddlie & Tashakkori 2003, p.

[8] Realism argues that the natural and the social world exist independently from human action and observation and that this reality can be objectively measured. Relativism on the other hand argues that views are relative to differences in perception and consideration; that there is no universal, objective truth but rather each point of view has its own truth (Morgan 2018).

5). It is depicted as one of the fastest growing approaches in research (Bergman 2008, Franz *et al.* 2013, Heyvaert *et al.* 2013, Wenger-Trayner *et al.* 2017). Mixed methods research is labelled as both a methodology and a method: that is, a methodology because it has its own paradigmatic perspectives and a method since it has described methods of enquiry that draw on diverse meta-theoretical assumptions (Creswell & Plano Clark 2011). It is characterised by the investigator using both quantitative and qualitative approaches or methods in a single study (Tashakkori & Teddlie 2010). Many definitions have been suggested over the preceding twenty years, with many classifications evident in the literature (Hanson *et al.* 2005, Curry & Numez-Smith 2015, Plano Clark *et al.* 2015). However, for the purpose of this research the definition developed by Johnson *et al.* (2007, p. 123) based on the systematic synthesis of nineteen previous definitions is used: 'mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration'.

A core premise in mixed methods research is that using complementary methods in pursuit of a question yields greater insight than either method alone would. Included in this is the deliberate, systematic integration of the quantitative and qualitative data generated in order to ensure that 'the whole is greater than the sum of parts' (Curry & Numez-Smith 2015, p. 10). This study used a mixed methods explanatory sequential design with connected integration (Figure 3.2), incorporating two Phases. Phase 1 utilised a longitudinal cohort study design to collect data on the prevalence of postpartum sexual health issues. This was followed by Phase 2 which consisted of one-to-one semi-structured interviews to explore women's experience of their sexual health since the birth of their first baby. The study is considered connected in several ways: the sample interviewed is a subsample drawn from Phase 1, whereby the subsample selected for Phase 2 was based on responses provided by women in Phase 1; some questions on the interview guide were included as a result of findings from Phase 1; and although the findings of each Phase are presented separately, they are thoroughly integrated and discussed collectively in relation to the available literature.

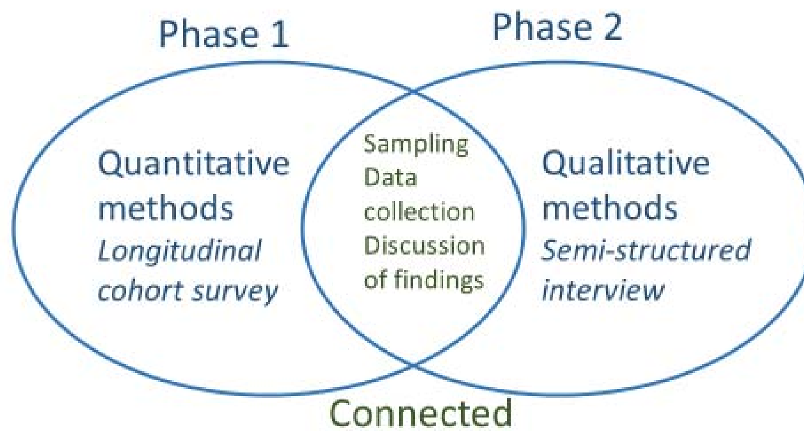

Figure 3.2 Overview of mixed methods explanatory sequential design with connected integration for this study

3.3.1 Rationale for mixed methods explanatory sequential design

As the purpose of this study, broadly, is twofold, that is, to identify postpartum sexual health issues and explore women's experiences of these after the birth of their first baby, it requires gathering different types of data. These include data on the extent to which women experience sexual health issues and what factors if any influence sexual health issues (study objectives i) and ii); survey data). It also requires data derived through a deeper exploration of the impact of birth on women's sexual lives, their intimate relationships and their perception of themselves as sexual persons (objectives iii) to v); one-to-one interviews). There is a resounding lack of women's voices and perspectives about their sexual health after birth in the literature as identified in the review of the literature and concept analysis in Chapter 2. In addressing the research objectives iii) to v), this study will go some way to contributing to the discourse of women's experience of their postpartum sexual health. Therefore, this study's aim and objectives called for an integration of both quantitative and qualitative methodologies.

There are two primary considerations in the overall design of a mixed methods study: (1) how precisely the components will be integrated, and (2) the relative timing of when each component is carried out (Creswell & Plano Clark 2011, Creswell 2013, Guest 2013, Curry & Numez-Smith 2015). These key factors define the fundamental relationship between the two

components of the study. The nature of data required to address the research question determines how the quantitative and qualitative data will be integrated. Once the overall plan for integration is defined, the timing of each component follows naturally. This study has utilised a 'connected' approach to integration, where one type of data build upon another (Creswell 2013, Curry & Numez-Smith 2015). In this study connected integration is evidenced in two main areas: 1) sampling, whereby, the analysis of survey responses received in Phase 1 (QUANT) of the study provided a sample for the semi-structured interviews in Phase 2 (QUAL), and 2) one set of data, the QUAL data, were used to explain some of the findings from the QUANT phase, with the semi-structured interview guide developed having survey responses in mind that warranted more in depth exploration. It is logical then that the timing of each component is sequential with Phase 1 (QUANT) taking place before Phase 2 (QUAL). This is illustrated in Figure 3.3.

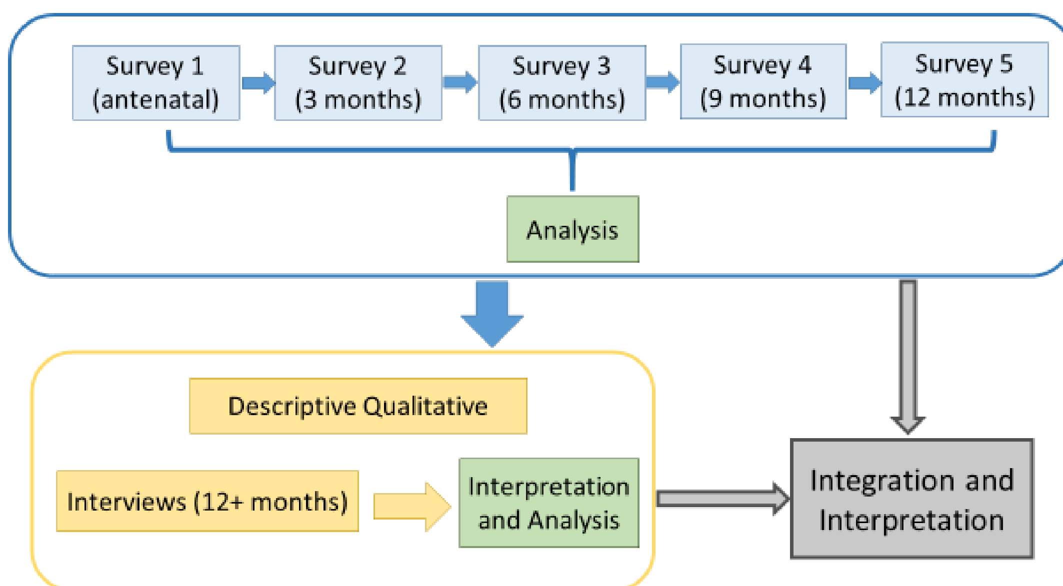

Figure 3.3 Explanatory sequential design with connected integration

3.3.2 Phase 1 (QUANT) Longitudinal survey based cohort study

A longitudinal cohort survey design was used for Phase 1, in which a group of women were followed prospectively to identify changes in phenomena (sexual health) over time (Plano Clark 2010, Caruana *et al.* 2015). Survey design is beneficial for collecting information on variables as they naturally occur (Polit & Beck 2014). Each survey had a detailed section on sexual health. Table 3.2 provides an overview of the sexual health survey at each time point.

The sexual health survey was embedded in the overall MAMMI surveys[9] which were seeking information on multiple aspects (e.g. incontinence, pain, anxiety, etc.) of the health and well-being of first-time mothers during the first twelve months after birth in Ireland (see Appendix 7 for a summary of sections in the MAMMI study and Appendix 8 for a sample survey). Demographic data were also collected which included age, country of birth, marital status, highest level of education, employment status and accommodation status.

Table 3.2 Summary of sexual health survey

Survey 1 (antenatal)	
Pre-pregnancy	**Early pregnancy**
Sexual health issues	Sexual health issues
Type of sexual activities	Type of sexual activities
Frequency of sexual activity	Frequency of sexual activity
Overall satisfaction with sexual life	Overall satisfaction with sexual life
Health service-seeking behaviour	Health service-seeking behaviour
Survey 2 (three months postnatal)	
Resumption of sexual activity and vaginal intercourse	
Pain during sex	
Physical pleasure in sexual relationship	
Type of sexual activity	
Emotional satisfaction	
Sexual health issues	
Overall change to sex life	
Factors affecting sex life	
Survey 3 (six months postnatal)	
Resumption of sexual activity and vaginal intercourse	
Pain during sex	
Physical pleasure in sexual relationship	
Type of sexual activity	
Emotional satisfaction	
Sexual health issues	
Overall change to sex life	
Factors affecting sex life	
Survey 4 (nine months postnatal)	
Resumption of sexual activity and vaginal intercourse	
Overall satisfaction with sexual life	
Pain during sex	
Type of sexual activity	
Frequency of sexual activity	
Emotional satisfaction	
Sexual health issues	

[9] MAMMI surveys were adapted with permission from the Maternal Health Study in Australia, Brown et al (2006) by Dr Deirdre Daly the Principal Investigator of the MAMMI study.

Overall change to sex life
Factors affecting sex life
Survey 5 (twelve months postnatal)
Resumption of sexual activity and vaginal intercourse
Pain during sex
Overall satisfaction with sexual life
Type of sexual activity
Frequency of sexual activity
Emotional satisfaction
Sexual health issues
Overall change to sex life
Factors affecting sex life

3.3.2.1 Data collection for Phase 1

Sexual health survey

The sexual health survey was adapted from and based on the sexual health component of the Maternal Health Study[10] with permission (Brown *et al.* 2006). The questions originated from Richters *et al.* (2003), Brown *et al.* (1999) and Barrett *et al.* (2000) and remained unchanged. As I became immersed in the literature I grew cognisant of the potential impact of women's perception of their body image on their postpartum sexual health, and, following consultation with my supervisors and a Professor in Psychology, I developed a question on satisfaction with body image that was added to each postnatal survey. Response categories to the various questions on sexual health varied from binary questions (yes/no to the experience of sexual health issues), to Likert-type scales (1 – very satisfied with sexual life to 5 – very dissatisfied with sexual life) and multiple choice questions (choice of healthcare professional consulted).

Five A4 hard copy surveys were administered at five difference time points; one in early pregnancy (at the first antenatal booking visit, approx. 10-16 weeks' gestation) and at three, six, nine and twelve months postpartum. Survey as a data collection tool is ideal as a means of gathering information on a large sample of people from a population of interest (postpartum women) on a concept of interest (postpartum sexual health) (Kelley *et al.* 2003). The longitudinal design of this study facilitates the repeated collection of data on the same sample,

[10] The Maternal Health Study is a large multicentre nulliparous prospective cohort study to assess maternal morbidity (including sexual health problems, urinary incontinence, faecal incontinence and mental health problems) during pregnancy and the first year postpartum in Melbourne, Australia. https://www.mcri.edu.au/research/projects/maternal-health-study

on the same variables, over a twelve-month period. This allowed for the identification of prevalence rates, change in prevalence over time and the identification of sexual health issues (e.g. dyspareunia) with associated factors (e.g. mode of birth) in the short and long term (Polit & Beck 2014). The presence of the following sexual health issues was assessed at each time point (Table 3.3):

Table 3.3 List of sexual health issues examined

Sexual health issues examined in this study
Lack of vaginal lubrication*
Pain during sexual intercourse*
Difficulty reaching orgasm*
Unable to reach orgasm*
Vaginal tightness*
Vaginal looseness*
Loss of interest in sex*
Satisfaction with overall sex life*
Frequency of sexual intercourse*
Time of resumption of sexual activity after birth
Perception of body image*

* these sexual health issues were compared for change over time

The sexual health issues examined in this study are dyspareunia (pain during sexual intercourse), lack of vaginal lubrication, loss of interest in sex, timing of resumption of sexual activity, frequency of sexual activity and satisfaction with overall sex life. These were identified as attributes of or issues (outcomes) associated with postpartum sexual health in a concept analysis, as described in Chapter 2, and subsequently published (O'Malley *et al.* 2015). Five independent risk factors have been identified as potentially influential in the occurrence of sexual health issues postpartum. These are mode of birth, perineal trauma, breastfeeding, perception of body image and pre-pregnancy dyspareunia. These independent risk factors were chosen for two reasons: firstly, the concept analysis on postpartum sexual health identified that birth without use of instruments, an intact perineum, avoidance of episiotomy and a positive personal perception of body image were antecedents for postpartum sexual health (O'Malley *et al.* 2015). Secondly, knowledge of the scientific literature suggested that breastfeeding has the potential to compromise postpartum sexual health (Connolly *et al.* 2005) and pre-existing dyspareunia increases the likelihood of experiencing sexual health issues after birth (Barrett *et al.* 2000, McDonald *et al.* 2015b). Each risk factor examined was assessed in association with the sexual health issues of dyspareunia, lack of vaginal lubrication, loss of interest in sex and resumption of sexual activity after birth, engagement in sexual activity and

satisfaction with overall sex life (see Chapter 4, Section 4.4 for further details on timing of assessments and rationale for these).

Validity of the sexual health survey

The validity of a survey is considered to be the degree to which it measures what it claims to measure and the purpose of the survey is clear to those answering it (Neuman 2006). Face validity has been described as the weakest validity measure, but one that is essential. This type of validity addresses the extent to which the items appear (face value) relevant, important and interesting to respondents. In this case face validity was assessed by fifteen pregnant or recent postpartum women who completed the survey relevant to them; that is, Survey 1 if pregnant and Survey 2 if postpartum. Women were asked to consider: overall user friendliness of the survey, length of time to complete the survey, relevance and acceptability of items. This was particularly relevant for the potentially personal and private nature of the sexual health items. None of those taking part found the items unacceptable or unclear and many commented that they understood the relevance of the questions being asked.

Content validity refers to how well a test measures the behaviour for which it is intended. It is used to verify whether the survey actually measures what it is expected to measure, assessing all domains associated with the construct (Neuman 2006). Content validity on the MAMMI study surveys was carried out by the Primary Investigator of the MAMMI study, Dr Deirdre Daly. In order to demonstrate content validity of the sexual health survey, lengthy discussions took place with Dr Daly on the process used and I was granted access to the content validity data in order to assess the content validity of the sexual health items specifically. A panel of eighteen experts were invited to examine Survey 1 and 2. Of these, fifteen completed the content validity assessments which involved rating the relevance of items on a scale of 1-4: 1) the item is not relevant; 2) the item needs major revision; 3) the item needs minor revision and 4) the item is relevant (Appendix 9 outlines the instructions given to the panel of experts). A content validity index (CVI) is then calculated based on the number of those judging the item as relevant to the aim of the study (rating 3 or 4) divided by the number of content experts. Polit & Beck (2006) recommend a minimum of 0.78 for item content validity index (I-CVI) and a standard of 0.90 for the scale content validity index (S-CVI) as acceptable scores. The I-CVI was calculated at 0.93, demonstrating high level of agreement on the relevance of the sexual health items in the survey. The scale content validity index (S-CVI) was found to be 0.92, again demonstrating an excellent level of agreement between all experts on the relevance of the overall survey (see Appendix 10 for table of results).

Test-retest reliability of the sexual health surveys

Test-retest reliability examines the stability of a test over time (Polit & Beck 2014). Ten pregnant women completed Survey 1 twice with a 1-2 weeks period in between. This was assessed for twelve sexual health items that were expected to remain stable. Items that were expected to remain stable included the presence of sexual health issues before pregnancy; whereas, items that might be unstable and change, such as weight, were not assessed. Responses from the test and retest surveys were entered into Statistical Package for Social Sciences (SPSS), and the data from the second administration of the survey were then compared to the original data. Cohen's Kappa coefficient was used to measure inter-rater agreement, which measures the strength of agreement between the test and retest responses. As the majority of items in the sexual health survey were categorical, Cohen's Kappa was used to compare consistency in responses (Field 2005). Kappa scores for the twelve sexual health items ranged from 0.75 –1.0. Polit & Beck (2006) suggest that consistency is considered good when the result is near 1.0 (0= agreement equivalent to chance, 1= perfect agreement).

3.3.3 Phase 2 (QUAL) Qualitative descriptive

Phase 2 involved a qualitative descriptive approach. The purpose of this approach was to facilitate a rich description of an experience (Neergaard *et al.* 2009); in this case, a rich description of women's experience of their sexual health at least twelve months after the birth of their first baby. Key features of qualitative descriptive research have been described in the literature. For example, using this approach researchers generally draw from a naturalistic perspective and examine a phenomenon in its natural state (Sandelowski 2010). It has also been described as less theory-driven than some other qualitative approaches (Neergaard *et al.* 2009), facilitating flexibility in commitment to a theory or framework when designing and conducting a study (Sandelowski 2000, Sandelowski 2010). Data collection strategies typically involve individual interviews and/or focus groups which have been described as being useful for obtaining broad insights and rich informative data (Sandelowski 2000, Neergaard *et al.* 2009).

3.3.3.1 Data collection for Phase 2

One-to-one semi-structured interviews were carried out with a subsample of women from Phase 1. Face-to-face interviews were arranged at a time and in a location convenient for the woman. Most often these were in their home, but occasionally in a hotel lobby convenient to

their workplace or home, and two interviews were held in a meeting room in Trinity College Dublin. Interviews were audio recorded with consent, using two audio recorders (one as backup). The purpose of the qualitative interview is to see and understand a phenomenon through the eyes of others, to find out things we cannot directly observe and gain insight into particular experiences (Britten 1995, Bryman 2012, Barbour 2014).

Interview schedule

An interview schedule was developed to guide the interview (Barbour 2014). It was not theory driven *per se*, rather it was developed from the research objectives, findings from Phase 1, a thorough knowledge of the existing literature and from discussions with experts, supervisors and research colleagues (Britten 1995, Bryman 2012). Three time periods were of particular interest: prior to pregnancy, the months after the baby was born and the present time (of interview). The interview was structured with this in mind. After opening with a broad general question to put women at their ease, I asked women to think back to before they became pregnant and to tell me about their general relationship with their partner; moving on to their intimate relationship with their partner and followed by their feelings about their own sexuality at that time. This was then repeated for the months that followed the birth and the present time. Open-ended questions were used that did not restrict women's options for responding and facilitated the collection of rich data (Creswell & Plano Clark 2011). The interview schedule was used as a guide only. The conversation flowed and women often compared present time to pre-pregnancy without any need for a prompt. Notes for appropriate probes, that is, questions to encourage women to expand on answers were kept on the interview schedule.

The interview schedule evolved after the first three interviews. A number of changes were made to it following personal reflections after each of the first three interviews (see Appendix 11 for the initial interview schedule and Appendix 12 for the final interview schedule).

Reflections following Interview 1

> 'I think we spoke about motherhood and adapting to motherhood more than her actual intimate relationship and while I get that that is important I think I need to probe a bit more about how her new role as a mother has impacted on her relationship with her partner. I need to focus more on the relationship…
> I feel I did a lot of questioning, particularly at the end, but now after listening back I think I might have been trying to claw my way back to talking about her relationship with her partner…I think I need to be more direct about sex, what do couples actually do for intimacy, is it penetrative sex, is it masturbation, do they use toys, maybe if I put

> it out there they will be more comfortable in saying ‘yeah, that’s what we do or used to do’ and it will bring the conversation back to intimacy with their partner. The other thing is, I have said on the information sheet that the interview is to talk about sex and intimacy since the birth of their first baby, so it makes sense then to ask directly about sex.’

Reflections following Interview 3

> You know what, women want to talk about becoming a mother and how hard it is and I think it’s my role to give them that space to do that, even if that takes twenty minutes. Women seem to want or even need to talk about that transition, where I need to be skilled in is coming back to their relationship with their partner, like earlier, when Joanna said she didn’t recognise herself from the independent working women who had her own money and loved buzzing in and out of town. I think I did well by going back to that point at a later stage and asking her how that made her feel about herself, as woman, as a sexual woman. The other thing I’m happy with is leaving the silences sit, I’m not rushing in there to fill the silence, even though it is taking a lot of effort to stay quiet and give her some time to think particularly if she looks like she’d like me to fill the gap. It’s so easy to jump in there.’

As one of the objectives of this study was to identify and explore health service-seeking behaviour, if women did not describe/discuss any health service-seeking behaviour during the interview I specifically questioned them about this. Health service-seeking behaviour in this study refers to problem-focused, planned behaviour involving interpersonal interaction with a selected healthcare professional (Chowdhury *et al.* 2007). I specifically asked women if they had spoken to anyone about their sexual health since their baby was born. Leaving this question open-ended and general, in terms of who they spoke to, enabled women to identify whether they spoke to healthcare professionals or others, such as friends, about their sexual health.

3.3.4 Integration of Phase 1 (QUANT) and Phase 2 (QUAL)

Integration of quantitative and qualitative data is an inherent component of mixed methods research (Franz *et al.* 2013). It dramatically enhances the value of the research (Bryman 2006a, O'Cathain *et al.* 2007); not to integrate effectively would question the rationale for conducting a mixed methods study in the first instance (O'Cathain *et al.* 2007). In this study integration occurred at three levels:

1. At the design level; the research objectives require that quantitative data are collected and analysed, these findings inform the qualitative data collection and analysis (Ivankova *et al.* 2006).

2. At the methods level; quantitative data and qualitative data were integrated by ‘connection’ whereby the sample for interview in Phase 2 were purposively selected from the survey participants, as described by Fetters *et al.* (2013), and data collection in Phase 2 (semi-structured interview schedule) was developed from survey findings in Phase 1 as described by Curry & Numez-Smith (2015) and Ivankova *et al.* (2006).
3. At the interpretation and reporting level; the findings from the quantitative and qualitative data are reported in separate sections, however, ‘meta-inferences’ are then made by discussing both sets of findings together in relation to the relevant literature. Conclusions are generated from the integration of inferences that have been obtained from the findings of the quantitative and qualitative phases of the study (Ivankova 2014). The integration of findings in the form of an in-depth and coherent discussion addresses the research aim.

3.4 Methods

3.4.1 Sampling approach, selection criteria and sample size

3.4.1.1 Sampling approach

Creswell & Plano Clark (2011) suggest that in an explanatory mixed methods design the same participants should be included in both phases of data collection. Collins (2010) uses the language of sampling typology. Curry & Numez-Smith (2015) talk about mixed methods sampling approaches, whereas, Teddlie & Yu (2007) discuss sampling frames. Regardless of terminology, however, there is unanimous agreement that in sequential and explanatory designed mixed methods studies information from the first sample is required to draw the second sample. As the intent of this study is to use qualitative data to provide more detail about the quantitative results, accordingly, the sample for the qualitative component was selected from the respondents to the survey in Phase 1. Curry and Numez-Smith’s (2015) three-step process to devising a mixed methods sampling design was adapted and used to determine the sampling approach for this study (see Figure 3.4).

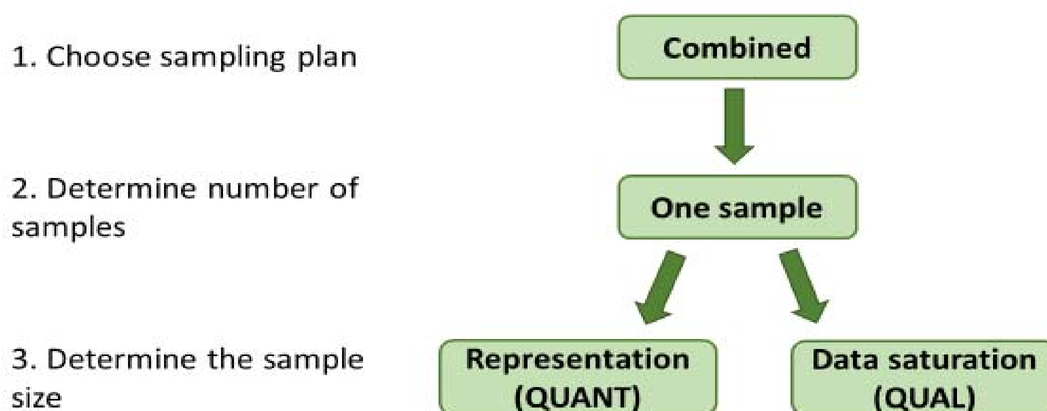

Figure 3.4 Mixed methods sampling algorithm (adapted from Curry & Numez-Smith 2015 p. 216)

Firstly, a systematic non-randomised sampling approach was used whereby all nulliparous women, meeting the study eligibility criteria (see Section 3.4.1.2), sequentially booking (first antenatal appointment) at the research site during the study period, were provided with study information and invited to take part in the study. This sampling approach was used to recruit to sample size estimates (see Section 3.4.1.3) so as to identify the existence and prevalence of sexual health issues in nulliparous women (QUANT objective i). Secondly, purposeful sampling was used to identify women for interview from the original sample used in Phase 1 (QUANT) after data analysis had taken place[11]. Maximum variation sampling, sometimes called a maximum diversity sample or maximum heterogeneity sampling, contains cases that are purposively selected for being as different from each other as possible. This facilitates diverse variations, that may have emerged in adapting to different conditions, to be documented (Patton 1990, Palinkas *et al.* 2015). In this case the sample was purposively chosen to include women who were satisfied, dissatisfied and neither satisfied nor dissatisfied with their sexual life; women who had different modes of birth; Irish born and non-Irish born women; and those who self-reported no sexual health issues, few sexual health issues or several sexual health issues twelve months postpartum (see Table 3.5).

[11] Only women who had indicated their consent to being contacted in the future for participation in interviews were considered for Phase 2 (Appendix 13, item 5).

Table 3.4 Sampling matrix for Phase 2 (QUAL)

Age	Country of birth	Mode of birth	No. of sexual health issues at 12 months*	Satisfaction with sexual life at 12 months
22-43 years (mean age 31.9 years)	Ireland x 15	SVB˜ x 8	0-2 issues x 6	Very satisfied x 1
	Poland x 2	Vacuum* x 3	3-5 issues x 12	Mod satisfied x 7
	Italy x 1	Forceps* x 4	>6 issues x 3	Equally sat/dissat x 5
	Netherlands x 1	El CSβ x 4		Mod dissatisfied x 3
	Czech Republic x 1	Em CS^ x2		Very dissatisfied x 3
	England x 1			Did not answer x 2

*Maximum number of sexual health issues – seven
˜SVB - Spontaneous vaginal birth
*Vacuum and forceps birth are vaginal births assisted by use of instruments
βEl CS - elective caesarean section
^Em CS - emergency caesarean section

3.4.1.2 Inclusion and exclusion criteria for Phase 1 and 2

All nulliparous women attending public, semi-private, private and DOMINO (community midwifery) services in one large maternity hospital in Dublin (between 31st January 2012 and 3rd October 2014) who fitted the selection criteria (see below) were invited to participate in Phase 1. Women who had given birth on or before 31st July 2014 were included in this PhD study to ensure that opportunity was given to complete the four postnatal surveys, to facilitate interviews at least twelve months after birth and in order for data analysis and write-up of this doctoral thesis.

Phase 1 (QUANT) Inclusion criteria

- Women had to be pregnant nulliparous women.
- Women had to be ages 18 years or more.
- Women had to agree to take part in the study.

Phase 1 (QUANT) Exclusion criteria

- Women who did not read and understand English.
- Women who experienced miscarriage, stillbirth or death of their baby following recruitment to the study were excluded from further participation in the study.

Phase 2 (QUAL) Inclusion criteria

- Women had to have completed all five MAMMI study surveys and consented to accessing their hospital records.
- Women who consented to being contacted for interview when recruited to Phase 1.
- Women had to give written consent to take part in the interview and consent to the interview being audio-recorded.

Purposive sampling using a sampling matrix to ensure that a wide variety of women's experiences were captured in Phase 2 is described in Section 3.4.1.1.

Phase 2 (QUAL) Exclusion criteria

- Women who did not consent to being contacted for interview.

3.4.1.3 Sample size for Phase 1 and 2

Being able to generalise the findings from the sample to the whole population of interest, with confidence, is a key factor in quantitative research designs (Polit & Beck 2014). In mixed methods research there is a focus on maximum external validity issues in the quantitative phase with the aim of sampling to achieve representativeness so that inferences from the sample can be reliably inferred to the larger population from which the sample is drawn (Curry & Numez-Smith 2015). The sample size for the qualitative phase of the study is concerned with depth and richness of data to enhance creditability and transferability.

Phase 1 (QUANT)

As it was beyond the scope of this study to administer a survey to all first-time mothers in Ireland during the study period, an appropriate sample size estimate that is representative of the population of nulliparous women in Ireland was calculated. The sample size for the MAMMI study (overall) was estimated based on a primary outcome of urinary incontinence (UI) and a null hypothesis of no difference in UI rates pre and post birth. This provided a sample size of 1600 to achieve a study sample of 880 respondents at twelve months follow-up. To calculate a sample size specific to the sexual health survey, and thus to ensure generalisability of this survey's findings, a composite outcome of sexual health issues was chosen as the primary outcome on which to base the estimate. Given that 26 650 nulliparous women approximately give birth annually in Ireland (the target population), and 32% will experience sexual health issues at twelve months postpartum, derived from an estimated average from previous studies (Khajehei *et al.* 2015, McDonald *et al.* 2015a, Fodstad *et al.*

2016), the study population for the sexual health strand is 8528 women. Using a Margin of Error of 5%, which allows for inaccurate answers 5% of the time, and a 95% Confidence Interval, which means if I sampled others in the population I would get the same results 95% of the time, the sample size for the sexual health survey is 752, to provide, based on a conservative 50% response rate at twelve months postpartum, responses from 376 women at twelve months postpartum. The actual number of respondents for the sexual health survey exceeds this sample size considerably (see Chapter 4, Section 4.2.1), thus providing reassurance for the generalisability of the results of the sexual health survey.

Phase 2 (QUAL)

The sample size for Phase 2 was dependent on data saturation. The concept of data saturation is a much debated one in qualitative research; when data being collected has become repetitive and no new issues are emerging, data saturation is said to have occurred and it is considered appropriate to cease data collection (Gibbs *et al.* 2007). Data saturation is a logical approach to deciding on sample size when the aim of the qualitative phase is to gather sufficiently rich data as a means of describing the phenomenon being studied (Fossey *et al.* 2002). The notion of theoretical saturation, primarily associated with grounded theory, was considered as a means of identifying when 'enough' data had been collected. Theoretical saturation is focused on ensuring that concepts in the theory are well-developed (Morse 2004). However, it is not the purpose of this study to develop and verify theory therefore data saturation or thematic saturation was used.

There is no universal agreement on the concept of data saturation. Mason (2010) suggests that the more experienced researcher might explore the context of a concept in more depth than an inexperienced researcher, prolonging data collection. Others argue that the longer researchers examine, familiarise themselves and analyse their data there will always be the potential for the 'new to emerge' (Corbin & Strauss 2015). Nevertheless, the decision of when saturation is reached is a subjective one. Consequently, a key recommendation in the literature on sample size in qualitative research argues for transparency as to how and when data saturation was achieved (Guest *et al.* 2006, Bowen 2008).

Forty-four women were telephoned regarding participating in Phase 2, fourteen women did not answer or return the call. Of the thirty I spoke to, nine were not interested in being interviewed. A final sample of twenty-one women were interviewed, data saturation was

reached after nineteen interviews; two more interviews were conducted and no new codes emerged.

3.4.2 Recruitment for Phase 1 and 2

3.4.2.1 Phase 1 (QUANT) recruitment

All women who met the selection criteria were approached by the midwife or midwifery student caring for them during their first antenatal (booking) visit between 1st February 2012 and 3rd July 2014. The midwife or midwifery student gave a brief outline of the study and if the woman was interested she was given a MAMMI study pack and asked if a researcher could ring her within the next two weeks to discuss the study further. The MAMMI study pack included Survey 1 (antenatal), an addressed freepost envelope, two copies of the consent form (Appendix 13) and a study information booklet (Appendix 14). A diary of names and telephone numbers of women who had taken a pack and agreed to being contacted was kept in each antenatal clinic and the details were collected weekly by the research team.

A member of the research team made a follow-up telephone call within two weeks to provide further information about the study, for example, the purpose of the study, potential benefit and harm, the time commitment involved, and women's right to withdraw from the study. Women were given the opportunity to ask questions and seek clarity on any issue related to the study. Those who expressed a willingness to participate in the study were asked to sign the included consent forms, keeping one for their own records and returning the other with the completed Survey 1. A webtext reminder was sent 3-4 weeks later if the completed consent form and survey had not been received. If, after webtext reminder, the consent form and completed Survey 1 were not returned, no further contact was made with the woman and her details were removed from the study database. Women who did not wish to take part were not contacted again and their personal details were removed from the study database.

Retention

Good retention rates, to ensure/maintain generalisability of the results at the different data collection time points, was an important objective in the study. For this reason, a retention policy was put in place. Surveys 2, 3, 4 and 5 were posted at approximately three, six, nine and twelve months postpartum to women who had completed Survey 1. If a postnatal survey was not returned, a reminder telephone call was made by a member of the research team four weeks after the survey had been posted. If a woman did not return a postnatal survey and had

not withdrawn from the study, she was sent the next and remaining postnatal surveys at the scheduled postpartum time point. In February 2014 ethical approval was obtained to increase the number of postnatal reminders. Subsequently, since February 2014 up to three postnatal reminders were carried out if a postnatal survey was not returned. The new retention process was: four weeks after posting the survey a telephone call was made, two weeks after that a webtext reminder was sent and two weeks after that the survey was resent.

3.4.2.2 Phase 2 (QUAL) recruitment

Women were recruited between May and August 2016 for Phase 2 of the study, on a phased basis to allow for concurrent data analysis. Only women who had consented to being contacted for future research during Phase 1 (i.e. item 5 on the consent form – Appendix 13), were contacted regarding participating in a semi-structured interview. Women were purposively sampled using a maximum variation sampling approach to get comprehensive insight into women's experience of their sexual health after birth (Section 3.4.1.1).

Women were not recruited for Phase 2 until they had completed all aspects of Phase 1, that is, all five surveys had been returned and at least one year had passed since the birth of their first baby. A minimum criterion of twelve months was chosen in order to include women who were experiencing persistent sexual health issues, as familiarity with the literature indicated that for many women postpartum sexual health issues are transient and self-resolve within the first twelve months after birth (Serati *et al.* 2008, Lurie *et al.* 2013, De Souza *et al.* 2015).

3.4.3 Data Preparation

3.4.3.1 Phase 1: quantitative data

Data were coded, entered into SPSS Version 22 (IBM Corp. 2013) and stored in the School of Nursing and Midwifery, Trinity College Dublin. Prior to analysis, data were cleaned and steps were taken to prepare the data for analyses. Data cleaning refers to a process to determine inaccurate or incomplete data and then improving it through error detection and correction (Chapman 2005). Spot checks for accuracy of data entry were carried out on 5% of all data that were used in this study. The data entry error rate was low, less than 1% for all surveys: Survey 1 - 0.45%, Survey 2 - 0.83%, Survey 3 - 0.27%, Survey 4 - 0.06% and Survey 5 - 0.44%. An error rate of between 1-5% is considered acceptable (Redman 2001, Chapman 2005). In addition the data were visually checked for discrepancies and further data cleaning was done by

running descriptive statistics for all variables of interest for this study, checking that the maximum and minimum values were in the ranges of the values in the survey. For example, in Likert-type scales a range of 1-5 was expected, and values outside of this were errors requiring correction (Pallant 2010). This type of error was seen in four instances.

As part of data preparation, and following initial descriptive analysis, it was obvious that some variables did not have sufficient entries for meaningful results to be obtained during analyses (Field 2005). Therefore several variables were collapsed and re-categorised, for example, mode of birth was re-categorised from nine categories to five categories (see Table 3.6 for example of re-categorising). This was essential for meaningful Chi-square test to be carried out to test for relationships between variables (see section below on associated risk factors).

Table 3.5 New categories for mode of birth

Original category	New category
Spontaneous vaginal birth	Spontaneous vaginal birth
Vacuum Kiwi	Vacuum
Forceps Kiwi & forceps Vacuum & forceps	Forceps
Elective CS Elective CS in labour	Elective CS
Emergency CS	Emergency CS

A similar process was carried out for some of the women's characteristics. For example, region of birth was developed from summary of fifty different countries of birth and condensed to eight regions, for ease of reporting and to facilitate comparison to national data. See Appendix 15 for a full list of variables re-categorised and/or re-coded for this study and the rationale for doing so.

In order to carry out the logistic regression analysis further re-coding took place. One of the research objectives was to determine if there was an association between sexual health issues and potential risk factors. Therefore, women who were not experiencing a particular sexual health issue, such as dyspareunia, had to be removed from these analyses, this involved transforming and re-coding in advance of logistic regression analysis (Field 2005).

3.4.3.2 Phase 2: qualitative data

Large volumes of data are obtained during qualitative data collection, which needs to be managed carefully as it can appear unyielding. The data were transcribed verbatim by a professional transcriber within days of the interview. The transcriptions included pauses, 'ums' 'ams' and repetitions, as these demonstrate how talk is structured and could alert the analyser to how an account is being framed (Ziebland & McPherson 2006). Meticulous data cleaning was undertaken to remove personal identifiers: women's names, their partners' names and their children's names. Quotes with identifiers were anonymised with pseudonyms. The transcripts were read initially against the audio recording to identify and correct any transcribing mistakes and to get a sense of the interviews as a whole. Notes were added from my field notes, for example, 'smiling', 'uncomfortable', 'laughing', and 'paused to attend to baby'. Once transcripts were cleaned and checked they were imported into NVivo 8 software (2008) for data management and analysis.

3.4.4 Data analysis

3.4.4.1 Phase 1 (QUAL) data analysis

Descriptive statistics were generated to describe the characteristics of the sample. Age, pre-pregnancy body mass index (BMI), region of birth, relationship status, level of education, employment status, accommodation status and number of weeks' gestation, for the study sample, were reported. Where possible, women's characteristics were compared to national data and/or clinical report data of nulliparous women who gave birth at the hospital site to assess the representativeness of the sample (Chapter 5 Section 5.2.2). Maternity characteristics were also reported. These included mode of birth, perineal trauma, analgesia used in labour and breastfeeding rates, and where possible were compared to national and hospital site data (Chapter 5 Section 5.2.3).

Missing data in surveys can be problematic (Oppenheim 1992). The nature of the personal questions asked about sex and intimacy meant that some women choose not to answer some items. A decision was made in the case of all missing data to use the 'exclude cases pairwise', which meant that if a woman had a value missing for a particular variable then her data were excluded only from the analysis of that variable, but included in all other analyses for which information was present (Pallant 2010). This meant that a pure description of the population

who responded to each item at each time point was presented using frequencies and percentages.

The existence, extent and prevalence of sexual health issues were described using frequency distributions and percentages. A decision was made to include women who had returned all surveys and consented to accessing their hospital records only in this study. The purpose of this was to accurately determine if there was any change in prevalence rates of sexual health issues over time; from pre-pregnancy to early pregnancy, pre-pregnancy to three months postpartum, pre-pregnancy to six months, pre-pregnancy to nine months postpartum and pre-pregnancy to twelve months postpartum. In order to do this McNemar's test was used to compare the proportion of women's responses at the different comparative time points, and determine whether these changed over time. For example, the proportion of women who indicated they experienced dyspareunia or other sexual health issues pre-pregnancy compared to early pregnancy, pre-pregnancy compared to three, six, nine and twelve months postpartum. This test is appropriate and commonly used for comparing proportions in correlated samples, that is, where proportions for outcomes from the same group of participants, rather than independent groups, are being compared; and when there are dichotomous variables, in this case YES/NO (Altman 1999).

Frequency of sexual activity, overall satisfaction with sexual life and satisfaction with body image were also described using frequency distributions and percentages. In these cases, because there were more than two categories (e.g. very satisfied, equally satisfied/unsatisfied and dissatisfied), the McNemar-Bowker test of symmetry is reported as it is useful when there are more than two categories per variable (IBM).

The cross-tabulation function in SPSS was used to determine if there was an association between sexual health outcomes and independent risk factors, for example, dyspareunia and mode of birth. Prior to analysis the assumptions of the Chi-square test were checked; firstly, the Chi-square test assumes that each observation is independent, that is, each woman is represented once only in the contingency table[12] (the observed frequencies). Secondly, the value of the cell[12] expected count is five or more (frequency counts) in at least 80% of the cells and no cell has an expected count of less than one (Field 2005). The expected cell count refers

[12] Contingency table is a type of frequency table that shows two variables' relationship to each other, such as dyspareunia and mode of birth. The combinations of the rows and columns are known as 'cells'.

to the frequency in each cell if no association was seen between variables. The Chi-square test compares this to the observed count; for example, the expected count if there was no association between dyspareunia and mode of birth compared to the observed association between dyspareunia and mode of birth.

The assumptions for using logistic regression were also confirmed; the study sample is representative of the population to which the inferences are being made (see Section 3.4.1.3). The sample size is sufficient to support the model, in that there are at least ten events per category of an independent risk factor. The data have been collected in a period when the relationship between the outcome (e.g. dyspareunia) and the independent risk factor(s) (e.g. mode of birth) remain constant. Furthermore, all important independent risk factors are included and they do not have a high degree of collinearity with one another, which means that one independent risk factor could not predict the same results as another independent risk factor (Peat & Barton 2005).

Multivariable logistic regression models were developed to determine if a number of risk factors together influenced the association with sexual health outcomes. The forced entry methods were used, where all covariates, for example, mode of birth, perineal trauma, breastfeeding, were placed in the regression model in one block (Field 2005). Covariates included in the model represent (potential) risk factors for sexual health issues that have been identified in the international literature. While not all of these factors were found to be statistically significant in the univariate analysis (see Section 5.4 for details), inconsistencies in the literature regarding the significance of the covariates as risk factors for sexual health issues (as highlighted in Chapter 2) warranted their presence in the multivariable logistic regression model (Pallant 2010). The confounding variables of age, BMI and level of education were added to the model as these too have been identified in the literature as potentially influencing postpartum sexual health issues (Radestad *et al.* 2008, McDonald & Brown 2013, Faisal-Cury *et al.* 2015). Two tests were used to assess 'goodness of fit' of the multivariable models. The Omnibus Test of Model Coefficients gives an overall indication of how well the model performs, over and above the results with none of the predictors entered into the model, hence, a highly significant value is required. The Hosmer and Lemeshow Test is a 'test for poor fit' with a non-significant result ($p>0.05$) indicating good fit (Pallant 2010).

3.4.4.2 Phase 2 (QUAL) data analysis

A process of constant comparative analysis was used to analyse data. This method is commonly associated with Grounded Theory data analysis. Although my aim was not to develop a theory, I felt that the combined systematic data collection, coding and analysis associated with this method would enable me to explore thoroughly women's experience of their sexual health after birth (Charmaz 2002, Braun & Clarke 2006). Following transcription, transcripts were read and checked for accuracy, then read again twice so as to become more 'immersed' in the data, once with the audio recording and once without.

Following immersion in the narrative, the next step of data analysis is coding. Charmaz (1983) as cited by Bryman (2001, p. 392) states that 'codes serve as shorthand devices to label, separate, compile and organise data'. The process of coding involved me going through each interview, word for word and labelling pieces of narrative (a word, sentence or chunk of narrative) under a descriptive label, that is, a code. It required that I was clear about what was being asked of the narrative; in order to do this, I continually asked myself, 'does this address the aims and objectives of my study?' Coding required that I remained true to the context in which the statements were made, for example, euphemisms and humour were sometimes used when describing apprehension and fear about resuming sexual intercourse after birth. It was important that I looked beyond the superficial humour and recognised the apprehension experienced (Bradley *et al.* 2007). As I continued to collect data and simultaneously code transcripts, new codes were added and the meaning of existing codes was refined as necessary. When this happened, previously coded transcripts were revisited in order to verify that the code still applied or whether some chunks of data required recoding. This process involved moving forward and backwards through the transcripts, drawing on my in-depth knowledge of the women's narratives, keeping the research objectives to the forefront of my mind and thinking in terms of the relationship of the codes to each other (Neuman 2006). NVivo was useful to provide structure to the coded narrative. For example, I coded sections of narrative under a label (referred to as a node in NVivo); each node contains all the narrative for that label, therefore, when I opened a 'node' I could see all of the coded narrative in one place. Nodes could be nestled under 'parent nodes' or subcategories. Node and parent node summary reports were easily accessible and were useful in visualising all the coded narrative during subcategory and thematic development.

During coding it was impossible not to consider emerging subthemes. Subthemes are groups of codes that relate to each other in some way. When codes were compared and identified as being similar, they were merged. For example the subtheme 'my (new) body' included 'positive body image', 'negative body image', 'accepting body', 'not feeling attractive', 'feeling attractive', 'partner's perception of body', 'pressure on self', 'confidence in body' and 'control over body' (Appendix 16). While subtheme development was instinctive for some, nevertheless, the data contained contradictions and exceptions and these were considered and sorted into subthemes, for example, 'not feeling attractive' and 'feeling attractive' were both included in 'my (new) body'. More challenging during developing subthemes were contradictions experienced by one or two women only, for example, the majority of women felt that kisses, cuddles and hugging were an important part of their intimate relationship with their partner; it was a means of demonstrating affection and was reassuring to women. However, two women did not enjoy these acts of affection, to them they were a prelude to sexual intercourse only and they withdrew from their partner. All contradictions and exceptions in the narrative were coded and included in this study as they demonstrate the unique experiences of women (Ritchie & Spencer 1994). During the development of subthemes memos were used to record my train of thought on how the codes related to each other; for example, the codes 'snuggling on the couch' and 'sleeping together' were considered as part of 'showing affection'. Analytic subthemes are said to be 'saturated' when there was sufficient information on the experience to consider it coherent and explicable (Green *et al.* 2007, p. 548). In this study subthemes were considered complete when I was able to make sense of all women's experiences.

Ziebland & McPherson (2006) suggest that the real interpretation of the narrative takes place during the identification of themes. The generation of themes provides the link between the subtheme and why the subtheme is important (Green *et al.* 2007). The aim of identifying themes is to explain 'what is going on in the narrative', taking account of the issues that have been raised rather than what was commonly said. In this study, themes are the explanation for experiences identified in the narrative, for example, the theme 'ongoing challenges to intimacy and sexual activity' explains the variety of problems that women experienced in relation to their intimate relationship after the birth of their baby. Included in the theme are the physical and psychological challenges women experienced, but essentially, the link between ongoing challenges to intimacy and sexual activity and why this is important to women's experience of their sexual health after birth is demonstrated. Figure 3.5 illustrates an overview of data preparation and analysis for Phase 2 of this study.

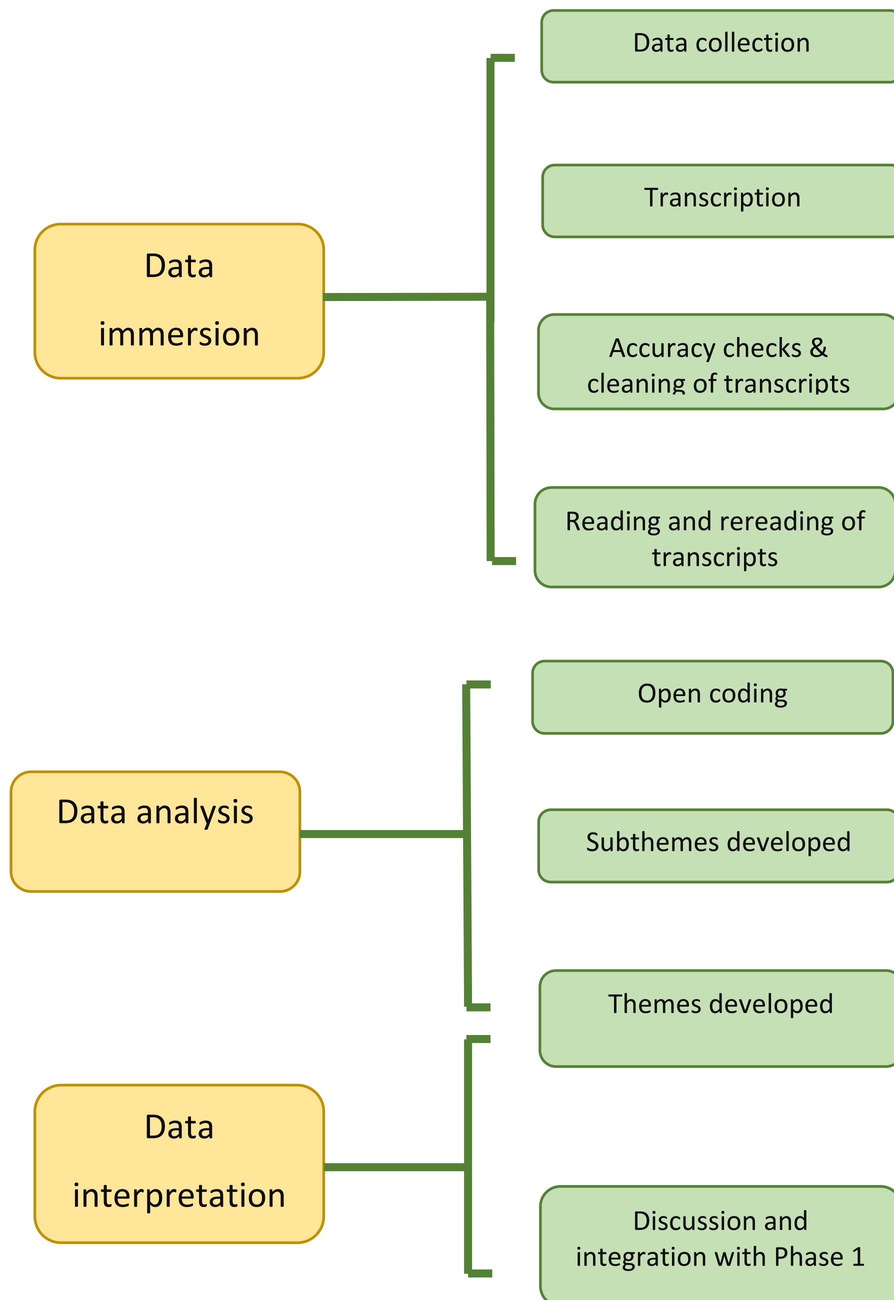

Figure 3.5 Overview of data preparation and data analysis for Phase 2 (QUAL)

To assist with the data analysis a number of strategies were used including memos, the One Sheet of Paper method and a reflexive diary. During initial readings memos were kept about ideas that were beginning to 'incubate'. In addition, ideas regarding possibilities of analysis were noted (Green *et al.* 2007) (Appendix 17). Using memos is credited with: enabling the researcher to make conceptual leaps from raw narrative to abstractions that explain

phenomena, such as the evolution of women's statement to themes that explain women's experience of their postpartum sexual health. Memos are attributed with enhanced data exploration, and aiding mapping the research activities (Birks *et al.* 2008). In this study memos assisted me in several ways. Firstly, during coding memos ensured that I was consistent in coding narrative, for example, when I came across narrative and I was unsure which code it would best fit or whether it required a new code, I referred to the codebook that had a description of the codes (Appendix 16). Secondly, on five occasions as data analysis was progressing it became clear that some narrative did not fit the code it had been allocated. I then made the decision to read back through the transcripts and recode; at the same time I kept a memo that mapped my thoughts and the reasons for recoding. Thirdly, my ideas on some emergent themes and subthemes came early in data analysis, and keeping memos enabled me to identify why I thought these were important and whether they could be delineated from other themes and subthemes as data analysis progressed (Appendix 17).

Immersion in the narrative took place early and was concurrent with data collection (May-October 2016). This had the benefit of assisting personal reflection on the interview process and refining my interview skills. It also made analysis more manageable rather than dealing with a very large amount of narrative at one time (Green *et al.* 2007). Keeping memos during data analysis was essential in order to sign-post my decision making, particularly when moving forward and backward in the narrative and changing coded text. At times chunks of narrative were allocated more than one code. The memos allowed me to note what direction I thought the narrative was taking me and to compare how the coded narratives related to each other (Appendix 17).

The One Sheet of Paper (OSOP) method was utilised in this study to develop themes. Each section of narrative was read, on the OSOP all the different issues raised by the coded extracts were noted (Appendix 18). Once all related issues were noted, the next step involved considering how these issues group together in broader themes (Ziebland & McPherson 2006). A reflexive diary was also kept; this allowed me to keep a record of how I felt about the emerging subthemes and themes, for example, personal experience of breastfeeding, giving breastfeeding advice as a midwife and the lack of information women received about breastfeeding and sexual health (Appendix 19).

3.4.5 Quality in mixed methods research

The question of quality in mixed methods has been described as 'one of the provocative methodological issues and most debated topics in mixed methods field in recent years' (Ivankova 2014, p. 25). The challenges lie not in demonstrating quality in the quantitative and qualitative phases *per se*, as there are well-established criteria for assessing quality in quantitative research, with quality in qualitative research dependent on how the researcher positions themselves in their research. In mixed methods research the challenges lie in the different conceptualisations of quality in mixed methods (O'Cathain 2010, Creswell & Plano Clark 2011, Curry & Numez-Smith 2015) and in the transparent emergence of meta-inferences that have been both inductively and deductively derived (Bryman 2007, Ivankova 2014). In twenty years there have been mixed methods evaluation frameworks, ranging from twenty criteria to just six criteria (Caracelli & Riggin 1994, O'Cathain *et al.* 2008). Teddlie & Tashakkori (2009) favour a quality framework that focuses on inference quality, which is a combination of design quality (methodological rigour) and interpretative quality (authenticity of conclusions from the study). Onwuegbuzie & Johnson (2006) have criticised this framework for being outcome focused and argue in favour of the 'legitimation' of mixed methods research with a more process-orientated view of quality. O'Cathain's (2010) comprehensive eight-domain framework evolved from previous work on lack of transparency in reported mixed methods research (O'Cathain *et al.* 2008), where they developed a set of criteria for good reporting of a mixed methods study. The extensive nature of O'Cathlain's (2010) framework with numerous items in each domain made it cumbersome and impractical to use. Therefore this study has used an adapted version of O'Cathlain's framework as described by Curry & Numez-Smith (2015, p. 181) to address issues of quality in the design and issues of integration and inferences. Table 3.7 gives an overview of the quality framework used and where the different items are addressed in this thesis.

Table 3.6 Mixed methods appraisal framework (Curry & Numez-Smith 2015, p. 181)

Domain of Quality	Appraisal Criteria	Addressed in this thesis
Conceptualisation and justification of the study as mixed methods	To what degree is there an explicit and sound rationale for using mixed methods? Are the strengths of each method used to minimise the limitations of the other? Was there an *a priori* plan for ensuring yield (whole is more than the sum of the parts)?	Chapter 3 Section 3.3
Design quality	Is the design appropriate for addressing the overall question, and does it align with the reason for combining methods? Is a description of the design from a known typology provided?	Chapter 3 Section 3.3
Adherence to respective standards for quantitative and qualitative methods throughout	To what degree were established standards adhered to for each of the individual components with regard to sampling, data collection and analysis?	Chapter 3 Section 3.4
Adherence to standards for mixed methods data analysis		
Resolution of divergent findings	Have divergent findings from different components been adequately identified and plausibly explained?	Chapter 6 Sections 6.3-6.7
Treatment of concordant findings	Has the possibility of shared bias between the methods been considered and addressed?	Chapter 6 Section 6.8.2
Rigour of data transformation	Is there a clear rationale for the data transformation? Have established procedures been described and followed?	NA*
Quality of analytic integration		Chapter 3
Statement of type of integration	Is there a clear *a priori* plan and technique for integration across datasets?	Section 3.3.3
Type of integration is appropriate for the particular design	Is the integration plan appropriate given the particular study design? Is the plan designed with attention to sequencing, weighting of components?	
Degree of yield	Do results from integration generate more comprehensive findings than either component would alone? Does the study produce publications that include findings from both?	

Quality of interpretation		
Interpretative transparency	Is it clear which findings have emerged from each method?	Chapter 6 Section 6.2
Interpretative efficacy	Do the overarching (meta-) inferences adequately synthesise inferences from the quantitative and qualitative findings?	

*NA Data was not converted (i.e. transformed) from quantitative to qualitative or *vice versa* in this study.

3.4.5.1 Quality issues in Phase 1 (QUANT)

When considering quality in quantitative research issues of validity, reliability and generalisability are commonly addressed. Validity and reliability of the survey have been discussed in Section 3.3.2.1.

Generalisability

Generalisation refers to making generalisations, predications or inferences on data yielded from a representative statistical sample to the population from which the sample was drawn (Onwuegbuzie & Combs 2010). To assess the generalisability of findings, characteristics of the study participants were compared to nulliparous women who gave birth at the hospital site and nationally where possible, as is described in Chapter 4.

3.4.5.2 Quality issues in Phase 2 (QUAL)

The criteria of validity and reliability to address quality in the positivist paradigm are generally not considered appropriate for qualitative research, although some defend the use of validity and reliability as a criteria for all research, just adapted for qualitative studies (Morse 1999, Mays & Pope 2000, Whittemore *et al.* 2001). More commonly, the concepts of trustworthiness and rigour are used in qualitative research (Rolfe 2006). Tina Koch argues that the rigour of a study can be established if the reader is able to audit events, influences and actions of the researcher (Koch 2006). The most established and frequently used criteria for addressing quality in qualitative research are the trustworthiness criteria presented by Lincoln & Guba (1981): credibility, transferability, dependability and confirmability. Although critics argue that these criteria too have evolved from the positivist climate of the 1980s when qualitative research methods were attempting to get a foothold in the research community (Cutcliffe & McKenna 2004). An alternative set of criteria suggested by Yardley (2000) was felt to be less rigid and more in tune with the philosophy of qualitative methods, whereby a flexible application of the following criteria is proposed and was utilised in this study: sensitivity to context, commitment and rigour; transparency and coherence; and impact and importance.

Sensitivity to context

This refers to context of the research: relevant literature, empirical data, sociocultural setting, participants' perspectives and ethical issues (Yardley 2000). A meticulous review of the literature was carried out to ensure a deep thorough knowledge of 'what is known' about

postpartum sexual health and the understandings created by previous investigators (Chapter 2). The concept analysis on postpartum sexual health facilitated a deep understanding of the concept; it identified antecedents, attributes and outcomes of postpartum sexual health, but equally important it identified gaps in the literature and the absence of a theoretical definition (Chapter 2).

The social context of the relationship between women and the researcher was considered; sensitive interviewing, open body language, use of open-ended questions and the development of a trusting relationship all facilitated the collection of rich data (Section 3.3.3.1). In order to ensure sensitivity to the differing perspective of those involved and the wider community to whom the study is relevant, a maximum variation sampling strategy was used (Section 3.4.1.1).

Commitment and rigour

This refers to in-depth engagement with the topic; methodological competence and skill; thorough data collection; and depth and breadth of analysis (Yardley 2000). This was demonstrated by prolonged engagement with the topic, personal development in skills for data collection and data analysis, and immersion in the data. Comprehensive data analysis was demonstrated in a number of ways; during data collection if I was unsure of the meaning of something, or of a view expressed by women, I asked for clarity or confirmation, this ensured my interpretation was as reflective as possible to the women's experience. To borrow from Lincoln & Guba (1981), an audit trail (or record) of all steps of the study process provides justification of all actions in the study process.

In order to demonstrate rigour in data analysis, after completion of the first three interviews, the three transcripts were independently coded by another researcher, following which the findings were discussed. There was agreement as to the codes; however, I was inclined to jump forward to subtheme development. Using the software package NVivo allowed me to record memos and notes while coding. This enabled me to track and recall my thoughts on emerging subthemes (Bazeley 2007). I also had regular meetings with my supervisors during data collection and analysis to discuss emergent subthemes and themes, this was particularly helpful when unpacking complex themes like the guilt women described in relation to their changed sexual desire.

Transparency and coherence

Transparency and coherence relate to the clarity and cogency of the description. This was best demonstrated by providing thick description of the context in which findings arose, and by using appropriate interview excerpts to recreate a reality where the reader can recognise their meaningfulness. The quality of the narrative is an integral part of convincing the reader of the honesty of the interpretation.

The inclusion of a detailed description of every aspect of data collection; and the use of memos during data analysis and keeping a reflexive diary demonstrate a commitment to transparency and coherence (Section 3.4.4.2). Furthermore, having regular discussions with two senior researchers (my PhD supervisors) on methodological issues contributed to reducing research bias and enhanced the coherence of the study.

Impact and importance

This is considered the most decisive criterion by which any piece of research must be judged, or the 'so what' factor. There are many varieties of usefulness and the ultimate value of a piece of research can only be assessed in relation to the objectives of the analysis, the application it was intended for and the community for whom the findings were deemed relevant (Yardley 2000). Phase 2 of this mixed methods study was carried out in order to explore women's experience of their sexual health after the birth of their first baby, to explore any help-seeking behaviour and to explain results from Phase 1.

The theoretical worth of this study lies in its complete explanation of how women experience their sexual health after the birth of their first baby in Ireland. The validation of data through cross verification from Phase 1 (QUANT) and Phase 2 (QUAL) cannot be underestimated. Torrance (2012) maintains that the triangulation of data associated with mixed methods research gives a fuller, more nuanced and informed picture of the phenomenon under investigation, in this case, a fuller picture of women's sexual health after birth. From a sociocultural perspective the findings contribute to the discussion on the lack of visibility of women's sexual health in social policy in Ireland. In order to address how this research can have a positive impact on postpartum women a number of detailed implications for practice and policy are outlined in Chapter 7 and a dissemination plan is described.

3.4.6 Ethical considerations

Ethical approval for the overall MAMMI study was granted by the Faculty of Health Sciences Ethics Committee (Trinity College Dublin) and the Rotunda Hospital Ethics Committee in 2011. Ethical approval for the current study, the Sexual Health Strand, was granted by the Faculty of Health Sciences Committee (Trinity College Dublin) in October 2013 (Appendix 20 and 21).

Any research with humans is required to comply with the highest standards as articulated in critical international guidelines or codes pertaining to ethical conduct in research including the Declaration of Helsinki (World Medical Association 2004). The Declaration of Helsinki states that research involving human subjects must not take priority over the rights and interests of individuals (World Medical Association 2004). The Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research 1979) has identified core ethical principles upon which ethical conduct in research is built; beneficence, respect for human dignity and justice. These ethical principles are widely used to guide research on humans and have been identified as being important by the Irish Council of Bioethics (Irish Council for Bioethics 2010). Each principle was applied to this study as discussed below.

3.4.6.1 Beneficence

Beneficence implies that research should do good for others and maximise positive outcomes for society and participants, while avoiding or minimising undue harm or risk (Polit & Beck 2014). In this study there was no expectation of benefit for women by participation, other than helping the advancement of knowledge for the midwifery and healthcare professionals and for the benefit of future women birthing in Ireland. I did not anticipate any undue psychological distress would result from taking part in this research; nevertheless, there are a number of issues that needed to be considered and were addressed:

i. Death of a woman during the antenatal period or women who have a stillborn baby. The hospital database provided the MAMMI team with information on any maternal or infant deaths and their details were removed from the study database.
ii. During the study period if a woman became critically ill, was hospitalised elsewhere or died, I would have been unaware of this. Therefore the letter inviting participation in the postpartum surveys was sensitive to this possibility (Appendix 22).

iii. If the baby became critically ill, was hospitalised, died or was living apart from the mother during the study period, I would have been unaware of this. Therefore the letter inviting participation in the postpartum surveys was sensitive to this (Appendix 22). If I learned of the death of a baby, the woman's details would be removed from the study database.

iv. Postnatal surveys were not sent to women who had completed Survey 1 but had a miscarriage, stillbirth or neonatal death.

Sensitive interviewing

Included in the concept of beneficence is sensitive interviewing. The topic of sexual health is a sensitive one that could potentially cause upset and unintended harm. Several steps were taken in order to provide a safe, non-judgemental, empathic environment where women felt they could talk freely (Brayda & Boyce 2014). In preparation for the interviews I attended a qualitative training programme with Dr Jenny Hislop in the University of Oxford, a module of which was data collection in qualitative research. I spoke with other experienced qualitative researchers about their experience of carrying out interviews on sensitive issues; Dr Hannah Woolhouse and Dr Ellie McDonald (Woolhouse *et al.* 2012) and Professor Agnes Higgins who has experience in interviewing on sensitive issues such as: sexuality, lesbian, gay, bisexual and transgender identities and mental health issues (Higgins *et al.* 2008, Higgins *et al.* 2016a, Higgins *et al.* 2016b). I carried out two mock interviews, one with Professor Agnes Higgins and the second with a midwifery colleague. I spoke to a counsellor at the Rape Crisis Centre for advice on what to do if a historical or present abuse was disclosed to me and I prepared a list of contact details of local support services to give to women if a history of abuse was disclosed (Appendix 23). In addition, the venue and time for interview was always chosen by the woman, so as to allow the woman feel a sense of control (Elmir *et al.* 2011). The majority of interviews took place in their homes. This too can facilitate a position of control for women, rather than the 'power' being the researcher's (Doody & Noonan 2013); it can also be helpful in facilitating the development of a relationship of trust between the researcher and the woman being interviewed. Lastly, during the interviews I took great care to refer to my prepared interview guide occasionally only, as I wanted the woman to feel that she had my full attention and I was actively listening to her (Smith *et al.* 2009). This also allowed for free flowing conversation (Dempsey *et al.* 2016).

I started the interview with broad topics, such as, 'tell me about your life as a new mother?' then moved to more specific or sensitive topics, for example, can you tell me about your

relationship with your partner before you got pregnant?' The purpose of this was to put women at their ease and to relax into the situation (Doody & Noonan 2013). Throughout the interviews I made eye contact, used open body language and actively listened to the women; I used probes where appropriate and returned to previously mentioned areas of interest if it was inappropriate to probe at that point in the conversation (Smith *et al.* 2009, Bryman 2012, Doody & Noonan 2013). Prior to and during the interview I was aware of my own personal experiences as a midwife and as a new mother myself; however, I did not engage in reciprocal sharing of personal stories as suggested by Liamputtong (2007) as a means of rapport building, as I felt that this could potentially blur boundaries (Dickson-Swift *et al.* 2007) and/or give a false notion of what women might think I considered normal sexual behaviour and unduly influence their responses. Nevertheless I did identify myself as a midwife and mother as a form of self-disclosure in order to demonstrate honesty, empathy and trust. Doing this enabled me to be reflexive and aware of my own personal influences, beliefs and values (Peters *et al.* 2008, Dempsey *et al.* 2016).

Many women became visibly upset during the interview, and I always had a packet of tissues with me for this possibility. In these circumstances, I paused, gave the woman time to cry and checked if she wanted to continue or take a break and resume later, reschedule for another day or withdraw. Acknowledging the emotional distress and giving space further enhanced the relationship of trust between us (Dickson-Swift *et al.* 2007, Elmir *et al.* 2011).

Finally, concluding an interview where sensitive personal issues have been discussed takes skill; time was given for the interview to flow to its natural conclusion. Women were given the opportunity to ask questions, to provide feedback and to discuss their feelings when the interview was concluded (Murray 2003). A few minutes were spent talking about other things post interview to help women 'get back to reality' after the intensity of the interview (Dempsey *et al.* 2016). Ireland is a small place, and talking about intimate and sexual relationships is very personal, private and potentially embarrassing; women interviewed by me were not known to me but many lived within a twenty mile radius of my home. It is quite possible that we may come in contact with each other in the future. I checked with women if this happened how they would like me to respond. Concluding our meeting in this way, I believe, provided reassurance of my discretion and they left feeling empowered with some element of control.

3.4.6.2 Respect for persons

Respect for persons or human dignity is described in the Belmont Report (1979) as encompassing the right to autonomy and determination. It is chiefly concerned with recognising that individuals are autonomous agents and researchers should give credence to autonomous person's opinions and choices. There is a close relationship between autonomy and informed consent, insomuch as open disclosure enables individuals to make an informed and considered judgement.

Informed consent for Phase 1 (QUANT)

An information leaflet outlining the purpose of the study, potential benefits and harm, time commitment, data collection methods, voluntary participation and the right to withdraw, assurances of confidentiality and researcher contact details were included in the MAMMI study pack given to women by the midwife or midwifery student at first antenatal visit (Appendix 14). Two copies of the consent form were also in the MAMMI study pack, one which was to be kept for the woman's own records and the other returned to the MAMMI team. The consent form addressed consent for Phase 1, permission to access hospital records and a series of questions concerning being contacted for any related research in the future (Appendix 13).

Informed consent for Phase 2 (QUAL)

During the initial telephone conversation to recruit women to Phase 2 of the study, information on the purpose of the interview, what was involved in being interviewed and women's rights regarding being interviewed, was relayed. An information leaflet and two copies of a consent form were posted to women, one for their own records and one to be returned (Appendix 24 and 25). A two-week 'cooling off' period was facilitated to provide women an opportunity to change their mind having considered what was involved. At the time of interview women were afforded the opportunity to ask questions and study information was repeated again.

3.4.6.3 Justice

The principle of justice is concerned with the fairness of procedures and is applied in this study through the protection of women's privacy and confidentiality. All data were stored in keeping with the Data Protection (Amendment) Act (Government of Ireland 2003).

Protecting privacy and confidentiality in Phase 1 (QUANT)

The contact details of women who refused to take part in the study at the time of the antenatal recruitment telephone call or who did not respond and return Survey 1 within eight months following distribution of the survey and information pack were removed from the personal details database. If a woman returned Survey 1 but the consent form was incomplete or absent, postnatal surveys were sent with another copy of the consent form. Completing the survey and returning it was seen as indication of consent to participate in the study, but medical records were not accessed until the consent form was returned giving permission to do so. All surveys were given a unique identification number rather than using the women's names to ensure confidentiality.

Both the personal details database and the SPSS survey databases are encrypted. Hard copies are stored in locked cabinets accessible only to members of the MAMMI study team. Consent forms and returned surveys were separated and are stored separately.

Protecting privacy and confidentiality in Phase 2 (QUAL)

Only women who had initially consented to being contacted regarding taking part in an interview on one or more topics covered by the research were recruited to Phase 2 (Appendix 13, question 5). Audio recordings and transcripts were given a unique number, different from their study number in Phase 1. None of the reports of the results contain information that would identify any woman or their family members. Audio recordings and transcripts were labelled with a study number and are stored on an encrypted hard disk, kept in a locked office.

3.5 Conclusion

Situated within the pragmatic paradigm, this mixed methods study utilised an explanatory sequential design with connected integration to fulfil the research aim and a number of objectives of this study. This chapter illustrates the decision making undertaken through this study as two very different research approaches, a survey-based longitudinal cohort part (Phase 1) and a qualitative descriptive part (Phase 2), were integrated in a coherent manner to achieve the research aim and objectives. Issues relating to sampling, data collection, data analysis and quality in mixed methods research were discussed. Finally a detailed consideration of the ethical considerations in this study was outlined.

Chapter 4 Survey findings

4.1 Introduction

This chapter presents the findings from Phase 1 of this study – the quantitative results of the surveys on women's sexual health before, during and after pregnancy[13]. The purpose of the survey was to achieve study objectives i), ii) and v).

i. To identify the existence, extent and prevalence of sexual health issues antenatally and up to 12 months postpartum.
ii. To identify factors associated with sexual health issues.
v. To explore health service-seeking behaviours of women with regard to their postpartum sexual health.

This chapter reports on the responses from the 832 women who returned all five surveys and provided consent for the research team to access their hospital records.

4.2 Sample and study participants

This section is presented across three sub-sections: the first outlines recruitment and retention rates; the second describes the women's demographic characteristics; and the third describes their labour, birth and postpartum details. Where possible this information is presented alongside similar outcomes data from the site hospital and the National Perinatal Statistics Report 2013 (HSE 2014) for comparison purposes. Frequently the data from the National Perinatal Statistics Report takes into account total births for 2013 and does not provide information on nulliparous and multiparous women separately.

4.2.1 Recruitment and retention rates

During the recruitment period (31st January 2012 to 3rd October 2014), approximately 10 026 nulliparous women booked at the site hospital (3680 women in the last eleven months of 2012, 3766 women in 2013, and 2580 women in the first eight months of 2014). Of these women, 4809 (48%) were offered the study information, of whom 38% (n=1841) chose to take part in the MAMMI study. I have no way of knowing why nearly half of potential study

[13] Findings from this chapter contributed to a peer-reviewed publication: O'Malley D., Higgins A., Begley C., Daly D. & Smith V. (2018) Prevalence of and risk factors associated with sexual health issues in primiparous women at 6 and 12 months postpartum; a longitudinal prospective cohort study (the MAMMI study). *BMC Pregnancy and Childbirth* **18**(1), 196.

participants were not offered the study pack; it is possible that frequent rotation of midwifery staff and students in the antenatal clinics impacted on inviting women to participate. Weekly contact was kept with midwifery staff in an effort to keep up momentum, reminding midwives of the study and explaining the study to new team members.

Only women who gave birth on or before 31st July 2014 (n=1477) were included in this PhD study in order for postpartum follow-ups to be completed. Retention rates are presented in Figure 4.1. At each postnatal time point, only women who had withdrawn from the study were not sent the next survey, therefore, if no response was received and the woman had not withdrawn she continued to receive surveys. When postal errors occurred every effort was made to contact the woman to confirm details and a survey was sent to the new address. The sample included in this analysis includes women who returned all surveys at each postpartum time point and consented to accessing their hospital records. One hundred and one women were pregnant again when completing Survey 5 (twelve months postpartum). Frequency distributions and percentages were carried out to determine if their inclusion would impact on prevalence rates of sexual health issues (Appendix 26). Prevalence rates for postpartum sexual health issues were nearly identical when the 101 women were removed from the dataset. Therefore, a decision was made to include these women who were pregnant again twelve months after birth and met the inclusion criteria.

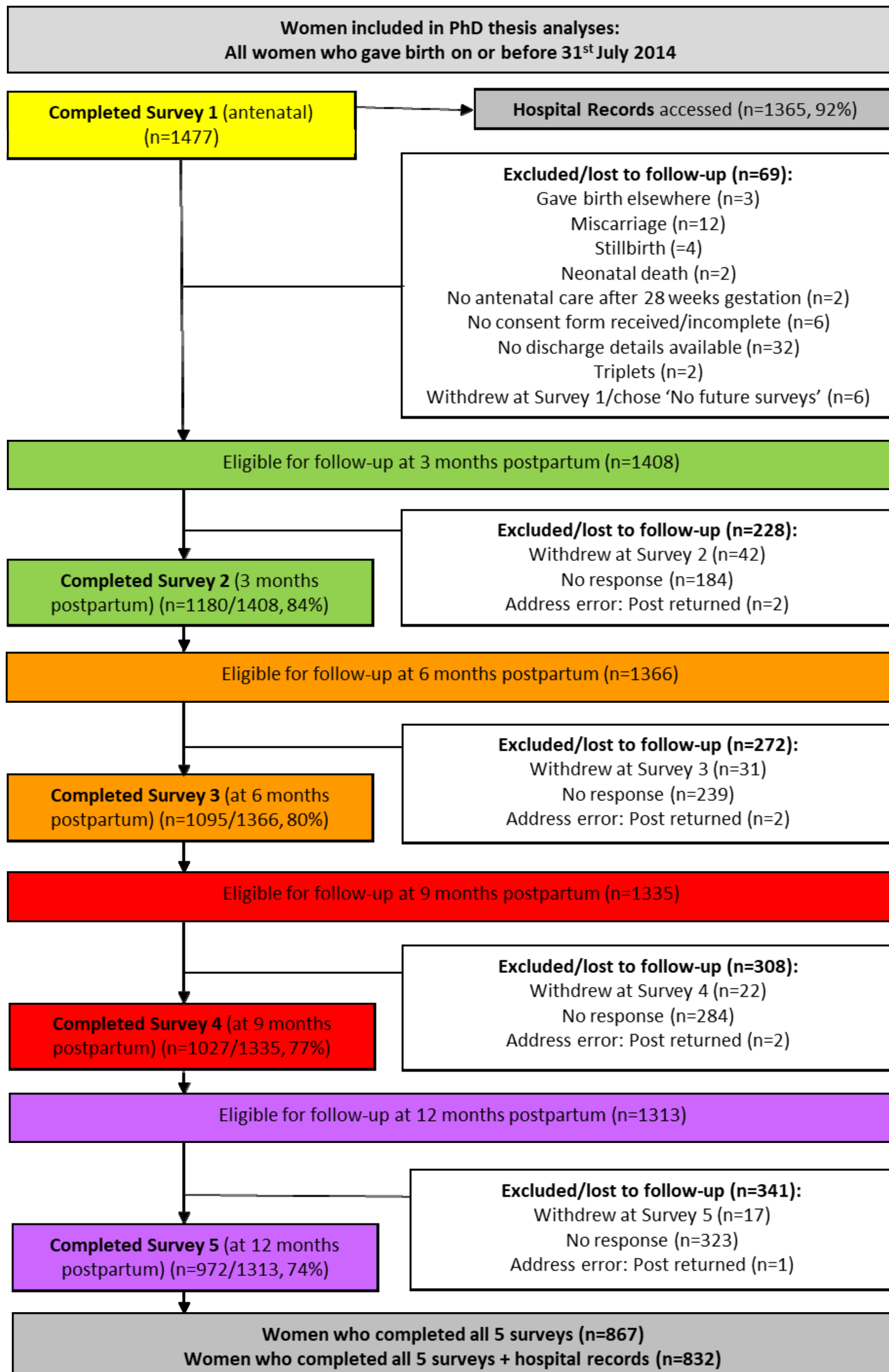

Figure 4.1 Flow chart of retention rate of 1477 women recruited to part 1 of this PhD study

4.2.2 Description of sample – women's characteristics

The characteristics of the 832 women included in this study are described in this section. The representativeness of the sample is assessed by comparing the study sample with the data from the total nulliparous population (the target population) in 2013 from the site hospital and the National Perinatal Statistics Report for the year 2013 (HSE 2014) where possible.

4.2.2.1 Age groups

The study sample had, proportionately, fewer under-24 year olds and more 30 – 34 year olds and 35 – 39 year olds when compared to national statistics and the site hospital (Table 4.1).

Table 4.1 Age groups

	Study participants		**Perinatal Statistics Report 2013**		**Site hospital 2013**	
Age group	**n**	**%**	n	%	n	%
Up to 24 years	41	4.9	5200*	19.5	790**	21.4
25 to 29 years	179	21.5	6533	24.5	905	24.5
30 to 34 years	376	45.2	9679	36.3	1211	32.8
35 to 39 years	207	24.9	4320	16.2	640	17.4
40 years and over	29	3.5	933	3.5	143	3.9
Total	832	100	26 665	100	3689	100

*Includes women younger than 18 years
** 197 women were less than 20 years old

4.2.2.2 Region of birth

The women who stated their country of birth were born in 50 different countries. Greater than two-thirds (n=566, 68.1%) are Irish and just over one-quarter (n=216, 25.9%) were born in another European country (Table 4.2). The five most common countries of birth after Ireland were Poland (n=58, 7%), United Kingdom (n=45, 5.4%), France (n=13, 1.6%), Germany (n=12, 1.5%) and Romania (n=12, 1.5%). There is a greater number of non-Irish in the study population than identified in the National Perinatal Statistics Report (77.3% versus 68.1%).

Table 4.2 Region of birth

Country of birth	Study participants n	%	Perinatal Statistics Report 2013 n	%	Site hospital 2013 n	%
Irish	566	68.1	53 383	77.3	6318	73
Europe (excluding Ireland and UK)	171	20.5	9329	13.5	1535*	17.8
UK	45	5.4	1561	2.3		
America	17	2	583	0.8	782**	9
Asia	10	1.2	2357	3.4		
Africa	8	0.9	1692	2.5		
Australia	3	0.4	101	0.1		
New Zealand & other Oceania	0	0	37	0.05		
Missing	12	1.4	224	0.3	13	0.2
Total	832	100	69267^	100	8648^^	100

*Includes UK
** Includes all non-European countries
^Total birth in Ireland 2013
^^ Total births in site hospital

4.2.2.3 Relationship status

Two-thirds of women (n=555, 66.6%) were married, while one-quarter were living with their partner but not married (n=206, 24.7%). Data from the National Perinatal Statistics Report (HSE 2014) differs in that, the 'never been married' category included women who were single, living with their partner, and in a relationship but not living together. Additionally, the numbers presented are for total births in 2013 (Table 4.3).

Table 4.3 Relationship status

Relationship status	Study participants n	%	Perinatal Statistics Report 2013 n	%
Married	555	66.6	44 176	63.8
Single	24	2.9	24 028	34.7
Living with partner	206	24.7		
In a relationship - not living together	41	4.9		
Divorced or separated	1	0.1	978	1.4
Widowed	1	0.1	68	0.1
Other	4	0.5	17	0.02
Total	832	100	69267*	100

*Totals birth in Ireland

4.2.2.4 Education level

Seventy-one percent of women had a university degree or higher (n=588, 70.6%) (Table 4.4). No data were available for this item from the site hospital or from the National Perinatal Statistics Report. The national rate of women aged 25-34 years with third-level qualification was 55.3% in 2013 (Central Statistics Office 2014) indicating that the women in this study have a higher rate of third-level qualification than the general population of women aged 25-34 years in Ireland.

Table 4.4 Highest level of education

	Study participants	
Highest Qualification	**n**	**%**
School-second level	89	10.7
Apprenticeship	75	9.1
Certificate or Diploma	77	9.3
Undergraduate degree	254	30.5
Postgraduate cert. or diploma	137	16.5
Postgraduate degree	197	23.6
Missing	3	0.3
Total	832	100

4.2.2.5 Employment status in early pregnancy

The majority of women were in paid employment (n=743, 89.6%) (Table 4.5); the category 'Other' included students (n=15, 1.8%) and women who were self-employed (n=10, 1.2%). Proportionately more women in this study were in paid employment compared to the proportion of nulliparous and multiparous women who gave birth in Ireland in 2013.

Table 4.5 Employment status of women in early pregnancy

	Study participants		**Perinatal Statistics Report 2013**	
Employment status	**n**	**%**	**n**	**%**
Employed	743	89.6	46 603	67.3
Unemployed	49	5.8	3248	4.7
Looking after family or home	4	0.5	128	0.2
Other (including student)	33	3.9	1985	2.9
Missing	3	0.3	17 303	25
Total	832	100	69267*	100

* Total births in Ireland

4.2.2.6 Accommodation status

More than half of women (n= 465, 56%) lived in accommodation with a mortgage and one-third (n=278, 33.5%) were in privately rented accommodation (Table 4.6). Of those that identified 'Other', 13 (1.5%) were living with their parents or parents-in-law, one woman was renting a room, one was staying with her boyfriend in his mortgaged house and one woman was evacuated from her mortgaged apartment due to concerns over fire safety in the building and was being housed by the local authority.

Table 4.6 Accommodation status

Accommodation status	Study participants n	%
House/Apartment without a mortgage	53	6.4
House/Apartment with a mortgage	465	56
Rented house/apartment - privately	278	33.5
Rented house/apartment - from local authority	14	1.6
Caravan/Mobile home	2	0.2
Hostel accommodation	1	0.1
Other	17	2
Missing	2	0.2
Total	832	100

4.2.2.7 Pre-pregnancy body mass index (BMI)

Over one-quarter of the women were overweight (n=205, 26.3) (Table 4.7). Pre-pregnancy BMI rates were not recorded at the site hospital or in the Perinatal Statistics Report.

Table 4.7 Pre-pregnancy body mass index

Body mass index	Study participants n	%
Underweight (≤18.49 kg/m2)	43	5.5
Ideal (18.5-24.99 kg/m2)	530	68.1
Overweight (25-29.99 kg/m2)	124	15.9
Obese (30-34.99 kg/m2)	68	8.7
Very obese (≥35 kg/m2)	13	1.7
Missing	54	
Total	832	100

4.2.2.8 Gestational age when completing Survey 1

Gestational age when completing Survey 1 was calculated by subtracting the estimated due date of the baby from the date Survey 1 was completed. Over half (n=376, 50.5%) of the women completed Survey 1 before twenty-four weeks gestation. For eighty-seven women, their gestational age could not be calculated because the estimated due date or Survey 1 completion date was not reported or reported with error, for example, giving an unreasonable gestation age of eighty-six weeks (Table 4.8).

Table 4.8 Gestational age when completing Survey 1

	Study participants	
Gestational age	**n**	**%**
0 to 12 weeks (<84 days) gestation	23	3.1
12 to 24 weeks (84-167 days) gestation	353	47.4
25 to 28 weeks (168-195 days) gestation	327	43.9
29 to 40 weeks (196-280 days) gestation	42	5.6
Missing	87	
Total	832	100

4.2.2.9 Type of maternity care

There are three maternity care packages available at the research site: public, semi-private and private maternity care. Public care is free and involves being cared for by midwives and/or obstetricians during pregnancy, birth and postnatally depending on risk associated with pregnancy. Women who chose public maternity care and are deemed to be of low risk can avail of midwife-led antenatal clinics, routine hospital care for birth and early postnatal discharge home under the care of community midwives. Semi-private care involves being seen by a consultant obstetrician or an obstetric registrar during pregnancy, their attendance at the birth and postnatal accommodation in a semi-private room (a four-bedded room). The average cost for semi-private care is €1200 - €1800. Private care package includes being seen by a consultant obstetrician antenatally and their attendance at the birth with postnatal accommodation in a single room. Private care costs between €3000 and €4000. These fees are not paid by insurance providers. Over half of women received public maternity care (Table 4.9).

Table 4.9 Type of maternity care

Type of maternity care	Study participants n	%
Public	449	54.1
Semi-private	267	32.2
Private	114	13.7
Missing	2	
Total	832	100

4.2.3 Description of sample – maternity details

The maternity details of the 832 women are presented in this section. These data were abstracted from their maternity records. Where possible the representativeness of the sample is assessed by comparing the study sample with the 2013 data from the site hospital and the National Perinatal Statistics Report 2013 (HSE 2014). Mode of birth for nulliparous women, specifically, for the site hospital is not available. For this reason, mode of birth for nulliparous women from a maternity hospital in the same city with a similar catchment area, the Coombe Women and Infants University Hospital (CWIUH), Dublin is presented, using the publicly available annual report (CWIUH 2014).

4.2.3.1 Mode of birth

Fewer women in the study sample had a spontaneous vaginal birth (n=296, 35.6%) compared to nulliparous women nationally (n=12 132, 45.5%) and in the CWIUH (n=1334, 43.2%). The study population also had a higher rate of forceps birth (n=101, 12% versus n=1494, 5.6%) than reported in national statistics (Table 4.10). Caesarean section rates were comparable, but the Perinatal Statistics Report or the CWIUH Annual Report did not break down caesarean section into elective and emergency.

Table 4.10 Mode of birth

Mode of birth	Study participants		Perinatal Statistics Report 2013		CWIUH Report 2013	
	n	%	n	%	n	%
Spontaneous vaginal birth	296	35.6	12 132	45.5	1334	43.2
Vacuum birth	172	20.7	5653	21.2	497	16.1
Forceps birth	101	12	1494	5.6	352	11.4
Elective CS	74	8.9	7386	27.7	914	29.6
Emergency CS	189	22.7				
Total	832	100	26 665	100	3097	100

4.2.3.2 Perineal trauma

All women who had a caesarean section (n=263) were removed from this analysis as they would present for the most part as having an intact perineum, thus skewing results. Fewer women in the study population had an intact perineum and labial/vaginal wall tears compared to nulliparous women at the hospital site. Study participants also had a higher rate of episiotomy. Other rates of perineal trauma are comparable (Table 4.11).

Table 4.11 Perineal trauma

Perineal trauma	Study participants		Hospital site 2013	
	n	%	n	%
Intact	7	1.2	143	5.6
1st degree tear	43	7.6	168	6.5
2nd degree tear	167	29.3	702	27.4
3rd degree tear	26	4.6	117	4.6
4th degree tear	0	0	4	0.1
Episiotomy	301	52.9	1187	46.3
Labial/vaginal wall tears	26	4.4	241	9.4
Total	569	100	2562	100

4.2.3.3 Pain relief in labour

Nearly four-fifths (n=646, 78%) of women had epidural analgesia during labour, which is comparable to nulliparous women at the hospital site. More than half (n=467, 56%) used Entonox gas. Many women would have used more than one type of analgesia, therefore totals are not presented (Table 4.12).

Table 4.12 Pain relief in labour

Pain relief	Study participants		Hospital site 2013	
	n	%	n	%
Epidural	643	78	1675	72
Entonox	467	56		
Pethidine	173	21		
Paracetamol or similar	117	14		
TENS	118	14		
Bath/shower	138	17		
Hypnobirthing	2	0		

4.2.3.4 Breastfeeding

Greater than half of the women were breastfeeding their baby three months after birth (n=431, 52%), this reduced to one-third at six months (n=317, 38%), one- quarter at nine months (24%) and 17% at twelve months (Table 4.13). National breastfeeding rates are not available in Ireland beyond breastfeeding on discharge from hospital for 2013; however, at three to four months postpartum 19% (n=347/1826) of women were exclusively breastfeeding their baby in Ireland in 2012, with an additional 13% (n=232/1826) combining breast and formula feeding (Gallagher 2012).

Table 4.13 Breastfeeding rates at three, six, nine and twelve months postpartum

Breastfeeding	3/12 pp n (%)	6/12 pp n (%)	9/12 pp n (%)	12/12 pp n (%)
Yes	431 (51.8)	317 (38.1)	201 (24.2)	140 (16.8)
No	273 (32.8)	323 (38.8)	431 (51.8)	502 (60.3)
Missing*	128	192	200	190
Total	832			

*missing includes women who had commenced breastfeeding but stopped by measurement time point

4.3 Existence, extent and prevalence of sexual health issues

This section describes the existence, extent and prevalence of sexual health issues at different time points: pre-pregnancy, early pregnancy, three, six, nine and twelve months after birth where the data are available. Basic assumptions have not been made with regards to missing data, rather, a description of the population based on the number of women who responded to each question at each survey time point is presented using frequencies (n) and percentages (%); *m* illustrates the number of women not contributing data to a specific item (i.e. missing

data). The significance level (p-value) for change in prevalence of sexual health issues from pre-pregnancy to early pregnancy and from pre-pregnancy to three, six, nine and twelve months postpartum is set at $p<0.05$ and calculated using McNemar's test for differences in paired/correlated proportions.

4.3.1 Self-reported sexual health issues over time

The prevalence of some sexual health issues persisted at each postnatal time point; for example, loss of interest in sex and vaginal looseness were significantly increased at each postpartum time point compared to pre-pregnancy. Nonetheless, the proportion of women experiencing a loss of interest in sex decreased over the twelve months postpartum, but not to pre-pregnancy levels (Table 4.14). The prevalence of some other sexual health issues increased immediately post birth and resolved over time; for example, there was a significant increase in the number of women who self-reported dyspareunia at three months (n=339, 53.9%, $p<0.001$) and six months (n=236, 37.5%, $p<0.001$) postpartum. This was returning to pre-pregnancy levels at nine months and was significantly less than pre-pregnancy levels at twelve months postpartum (n=129, 20.5%, $p<0.001$). There was an increase in self-reported lack of vaginal lubrication three months after birth (n=298, 45.3%, $p=0.001$) and at six months (n=283, 43%, $p=0.002$) compared to pre-pregnancy (n=241, 36.2%). This returned close to pre-pregnancy levels at nine months (n=245, 37.2%, $p=0.668$) and was somewhat less, but not significantly so, at twelve months after birth (n=233, 35.4%, $p=0.761$). Self-reported issues with orgasm were reported less frequently postpartum compared to pre-pregnancy. Before pregnancy 34.1% (n=203) of women experienced difficulty achieving orgasm and 19.7% (114) were unable to achieve orgasm; the prevalence of these sexual health issues was significantly less twelve months after birth at 23.5% (n=140, $p<0.001$) and 13.8% (n=80, $p<0.001$), respectively (Table 4.14). Figure 4.2 illustrates the prevalence rates of sexual health issues experienced by women at the different time points: pre-pregnancy, early pregnancy, three, six, nine and twelve months postpartum.

Table 4.14 Self-reported sexual health issues from pre-pregnancy to 12 months postpartum

Sexual health issue	Pre-pregnancy n/N(%)	Early pregnancy n/N (%) p value	3/12 pp n/N(%) p value	6/12 pp n/N (%) p value	9/12 pp n/N (%) p value	12/12 pp n/N (%) p value
Lack of vaginal lubrication *m=174*	241/658 (36.6)	167/658 (25.4) **p<0.001**	298/658 (45.3) **p=0.001**	283/658 (43) **p=0.002**	245/658 (37.2) p=0.668	233/658 (35.4) p=0.761
Pain during sexual intercourse *m=203*	184/629 (29.3)	155/629 (24.6) **p<0.001**	339/629 (53.9) **p<0.001**	236/629 (37.5) **p=<0.001**	186/629 (29.6) p=0.949	129/629 (20.5) **p<0.001**
Difficulty reaching orgasm *m=236*	203/596 (34.1)	156/596 (26.2) **p<0.001**	151/596 (25.3) **p<0.001**	183/596 (30.7) **p=0.021**	148/596 (24.8) **p<0.001**	140/596 (23.5) **p<0.001**
Unable to reach orgasm *m=254*	114/578 (19.7)	98/578 (17) p=0.01	88/578 (15.2) **p=0.014**	90/578 (15.6) p=0.072	85/578 (14.7) **p=0.001**	80/578 (13.8) **p<0.001**
Vaginal tightness *m=216*	138/616 (22.4)	130/616 (21.1) **p=0.121**	237/616 (38.5) **p<0.001**	200/616 (32.5) **p<0.001**	145/616 (23.5) **p=0.333**	107/616 (17.4) **p=0.028**
Vaginal looseness / lack of muscle tone *m=243*	10/589 (1.7)	10/589 (1.7) p=1	89/589 (15.1) **p<0.001**	79/589 (13.4) **p<0.001**	58/589 (9.8) **p<0.001**	53/589 (9) **p<0.001**
Loss of interest in sex *m=187*	216/654 (33)	349/654 (53.4) **p<0.001**	306/654 (46.8) **p<0.001**	303/654 (46.3) **p<0.001**	273/654 (41.7) **p<0.001**	260/654 (39.8) **p=0.003**

m missing

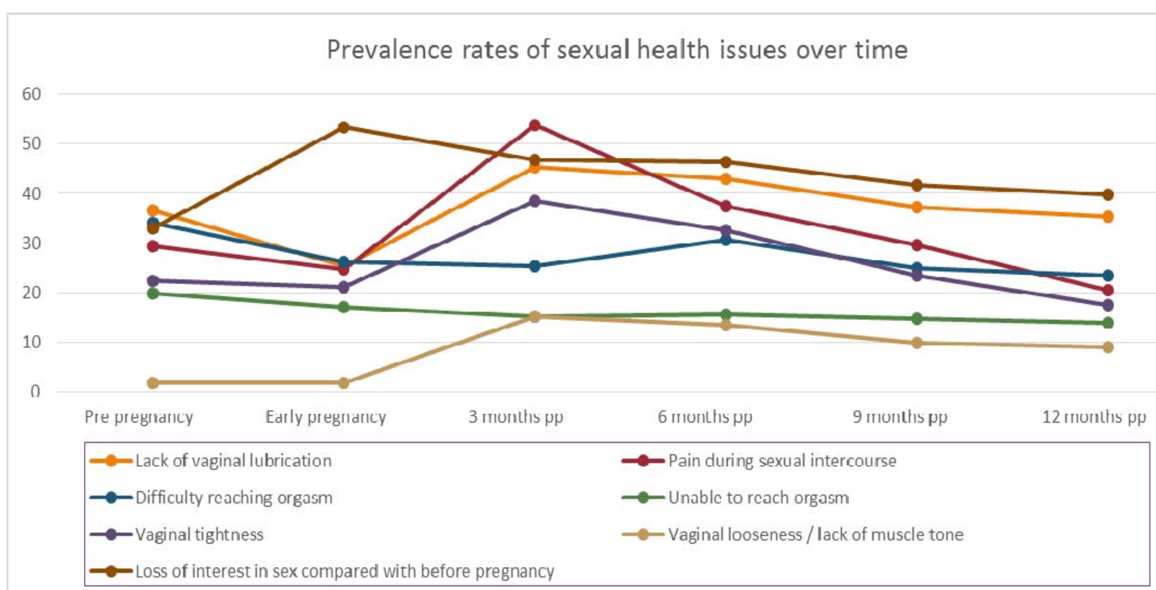

Figure 4.2 Prevalence rates of sexual health issues over time (%)

4.3.2 Self-reported timing of resumption of sexual activity after birth

Three months after birth 77.5% of women had resumed some form of sexual activity (Table 4.15).

Table 4.15 Self-reported resumption of sexual activity at three months postpartum

Timing of resumption of sexual activity 3 months after birth	n (%)
Have not had sexual or intimate contact since the birth	185 (22.4)
During the first 4 weeks	121 (14.7)
5-8 weeks after the birth	393 (47.6)
9-12 weeks after the birth	126 (15.3)
Missing	7
Total	832

Table 4.16 illustrates the responses women provided twelve months after birth. The frequency of women reporting resuming sexual activity during the first three months differs here; at three months 77.5% of women indicated they had resumed sexual activity, whereas at twelve months 65.9% reported having resumed sexual activity in the first three months. This could be explained by the passage of time influencing recall.

Table 4.16 Self-reported timing of resumption of sexual activity at twelve months after birth

Timing of resumption of sexual activity 12 months after birth	n (%)
Have not had sexual or intimate contact since the birth	23 (2.8)
During the first 3 months	542 (65.9)
4-6 months after the birth	214 (26)
7-9 months after the birth	29 (3.5)
10-12 months after the birth	14 (1.7)
Missing	10
Total	832

4.3.3 Self-reported frequency of sexual activity

Women were engaging in sexual activity less frequently when pregnant and less frequently at nine and twelve months postpartum compared to before pregnancy. This is evidenced using women's self-reported sexual activity frequency of 1-2 times per month. Before pregnancy, 8.9% (n=57) of women were engaged in sexual activity 1-2 times per month, increasing to 46.5% (n=299) in early pregnancy, 51.9% (n=334) at nine months postpartum, and 51.3% (n=330) at twelve months after birth. Correspondingly fewer women self-reported engaging in sexual activity at more frequent timeframes, that is, 1-2 times per week, 3-4 times per week and greater than four times per week (Table 4.17), which may not be overly unexpected considering that women who are trying to conceive would have sexual activity more often. This may explain some of the fall in frequency of sexual activity once pregnant, which was significant for all time points postpartum compared to before pregnancy (Table 4.18). More specifically when categories were collapsed, using McNemar's test for pair/correlated proportions, significantly more women were engaging in sexual activity 1-2 times per month in early pregnancy, at nine and twelve months postpartum compared to pre-pregnancy (Table 4.19).

Table 4.17 Self-reported frequency of sexual activity

Frequency of sexual activity	Pre-pregnancy n (%)	Early pregnancy n (%)	9/12 pp n (%)	12/12 pp n (%)
1-2 times per month	57 (8.9)	299 (46.5)	334 (51.9)	330 (51.3)
1-2 times per week	397 (61.7)	301 (46.8)	283 (44)	285 (44.3)
3-4 times per week	189 (29.4)	43 (6.7)	26 (4.1)	28 (4.4)
More than 4 times per week	21 (3.3)	4 (0.6)	3 (0.5)	3 (0.5)
Missing	189			
Total	832			

Table 4.18 Self-reported frequency of sexual activity and significance of change over time

Frequency of sexual activity	Pre-pregnancy n (%)	Early pregnancy n (%)	Pre- to early pregnancy	9/12 pp n (%)	Pre-pregnancy to 9/12 pp	12/12 pp n (%)	Pre-pregnancy to 12/12 pp
1-2 times per month	57 (8.9)	299 (46.5)	**<0.001**	334 (51.9)	**<0.001**	330 (51.3)	**<0.001**
1-2 times per week	397 (61.7)	301 (46.8)		283 (44)		285 (44.3)	
3-4 times per week	189 (29.4)	43 (6.7)		26 (4.1)		28 (4.4)	
More than 4 times per week	21 (3.3)	4 (0.6)		3 (0.5)		3 (0.5)	
Missing	189						
Total	832						

Table 4.19 Engaging in sexual activity 1-2 per month

Frequency of sexual activity	Pre-pregnancy n (%)	Early pregnancy n (%)	Pre- to early pregnancy	9/12 pp n (%)	Pre-pregnancy to 9/12 pp	12/12 pp n (%)	Pre-pregnancy to 12/12 pp
1-2 times per month	57 (8.9)	299 (46.5)	**<0.001**	334 (51.9)	**<0.001**	330 (51.3)	**<0.001**
More frequently than 1-2 times per month	589 (91.1)	344 (53.5)		309 (48.1)		313 (48.7)	
Missing	189						
Total	832						

4.3.4 Self-reported satisfaction with overall sexual life

More than half of all women were very satisfied with their overall sexual life before becoming pregnant (n=280, 52.7%). This fell in early pregnancy to 30.5% (n=162), falling further again at nine months to 24.9% (n=132) and remaining almost unchanged at twelve months postpartum (n=129 24.3%) (Table 4.20). Correspondingly, there was an increase in the number of women who self-reported being both moderately dissatisfied and very dissatisfied with their overall sexual life from pre-pregnancy to early pregnancy and nine and twelve months postpartum. There was a significant change in self-reported satisfaction levels with overall sexual life from pre-pregnancy to early pregnancy, nine and twelve months postpartum (Table 4.21), specifically, fewer women were very satisfied or moderately satisfied with their overall sexual life in early pregnancy, and at nine and twelve months postpartum, compared to before pregnancy (Table 4.22).

Table 4.20 Self-reported satisfaction with overall sexual life

Satisfaction with sexual life	Pre-pregnancy n (%)	Early pregnancy n (%)	9/12 pp n (%)	12/12 pp n (%)
Very satisfied	280 (52.7)	162 (30.5)	132 (24.9)	129 (24.3)
Moderately satisfied	195 (36.7)	204 (38.4)	215 (40.5)	232 (43.7)
Equally satisfied/dissatisfied	41 (7.7)	93 (17.5)	86 (16.2)	84 (15.8)
Moderately dissatisfied	14 (2.6)	51 (9.6)	63 (11.9)	54 (10.2)
Very dissatisfied	1 (0.2)	21 (4)	35 (6.6)	32 (6)
Missing	301			
Total	832			

Table 4.21 Self-reported satisfaction with overall sexual life and significance of change over time

Satisfaction with sexual life	Pre-pregnancy n (%)	Early pregnancy n (%)	Pre- to early pregnancy	9/12 pp n (%)	Pre-pregnancy to 9/12 pp	12/12 pp n (%)	Pre-pregnancy to 12/12 pp
Very satisfied	280 (52.7)	162 (30.5)	**<0.001**	132 (24.9)	**<0.001**	129 (24.3)	**<0.001**
Moderately satisfied	195 (36.7)	204 (38.4)		215 (40.5)		232 (43.7)	
Equally satisfied/dissatisfied	41 (7.7)	93 (17.5)		86 (16.2)		84 (15.8)	
Moderately dissatisfied	14 (2.6)	51 (9.6)		63 (11.9)		54 (10.2)	
Very dissatisfied	1 (0.2)	21 (4)		35 (6.6)		32 (6)	
Missing	301						
Total	832						

Table 4.22 Moderately satisfied and very satisfied with overall sexual life

Satisfaction with sexual life	Pre-pregnancy n (%)	Early pregnancy n (%)	Pre- to early pregnancy	9/12 pp n (%)	Pre-pregnancy to 9/12 pp	12/12 pp n (%)	Pre-pregnancy to 12/12 pp
Moderately and very satisfied	475 (89.5)	366 (68.9)	**<0.001**	347 (65.3)	**<0.001**	361 (68)	**<0.001**
Very dissatisfied, moderately dissatisfied and equally satisfied/dissatisfied	56 (10.5)	165 (31.1)		184 (34.7)		170 (32)	
Missing	301						
Total	832						

4.3.5 Self-reported satisfaction with body image

Women indicated at each time point whether they were always, sometimes or never satisfied with their body image. Results show that women were less satisfied with their body image at three, six, nine and twelve months after birth when compared to pre-pregnancy; 36.3% (n=298) were always satisfied with their body image pre-pregnancy. This reduced to 15.2% (n=125) at three months postpartum, 17.6% (n=144) at six months, 20% (n=164) at nine months and 20.9% (n=171) at twelve months postpartum. There was an equivalent increase in women who were never satisfied with their body image from pre-pregnancy to three, six, nine and twelve months postpartum. The differences in satisfaction with body image at each time point postpartum were all significant compared to before pregnancy (Table 4.24). When categories were collapsed into dichotomous variables there were significantly fewer women always satisfied with their body image three, six, nine and twelve months postpartum compared to before pregnancy (Table 4.25).

Table 4.23 Self-reported satisfaction with body image

Satisfaction with body image	Pre-pregnancy n(%)	3/12 pp n(%)	6/12 pp n(%)	9/12 pp n(%)	12/12 pp n(%)
Always satisfied	289 (36.4)	119 (15.2)	138 (17.6)	159 (20.3)	167 (21.3)
Sometimes satisfied	440 (56.1)	457 (58.2)	482 (61.4)	483 (61.5)	492 (62.7)
Never satisfied	59 (7.5)	209 (26.6)	165 (21)	143 (18.2)	126 (16.1)
Missing	47				
Total	832				

Table 4.24 Self-reported satisfaction with body image

Satisfaction with body image	Pre - pregnancy n(%)	3/12 pp n(%)	Pre-pregnancy to 3/12 pp	6/12 pp n(%)	Pre-pregnancy to 6/12 pp	9/12 pp n(%)	Pre-pregnancy to 9/12 pp	12/12 pp n(%)	Pre-pregnancy to 12/12 pp
Always satisfied	289 (36.4)	119 (15.2)		138 (17.6)		159 (20.3)		167 (21.3)	
Sometimes satisfied	440 (56.1)	457 (58.2)	**<0.01**	482 (61.4)	**<0.001**	483 (61.5)	**<0.01**	492 (62.7)	**<0.001**
Never satisfied	59 (7.5)	209 (26.6)		165 (21)		143 (18.2)		126 (16.1)	
Missing	47								
Total	832								

Table 4.25 Self-reported 'Always' satisfied with body image

Satisfaction with body image	Pre-pregnancy n(%)	3/12 pp n(%)	Pre-pregnancy to 3/12 pp	6/12 pp n(%)	Pre-pregnancy to 6/12 pp	9/12 pp n(%)	Pre-pregnancy to 9/12 pp	12/12 pp n(%)	Pre-pregnancy to 12/12 pp
Always satisfied	289 (36.4)	119 (15.2)		138 (17.6)		159 (20.3)		167 (21.3)	
Sometimes and never satisfied	499 (63.6)	666 (84.8)	**<0.01**	647 (82.4)	**<0.001**	626 (79.7)	**<0.01**	618 (78.8)	**<0.001**
Missing	47								
Total	832								

4.4 Univariate logistic regression analysis assessing risk factors for sexual health issues

This section addresses the objective:

ii) To identify the factors associated with sexual health issues.

Five potential associated risk factors were identified: mode of birth, perineal trauma, breastfeeding, perception of body image and pre-existing dyspareunia. Each factor was assessed in association with seven sexual health outcomes:

1) Dyspareunia measured at six and twelve months postpartum.
2) Lack of vaginal lubrication measured at six and twelve months postpartum.
3) Loss of interest in sexual activity measured at six and twelve months postpartum.
4) Resumption of sexual activity in the first three and six months measured at three and six months postpartum.
5) Engaging in sexual activity once or twice per month and once or twice per week measured at twelve months postpartum.
6) Dissatisfaction with overall sexual life measured at twelve months postpartum.

Associated risk factors were not assessed for each postnatal time point for several reasons. Firstly, some sexual health issues have already been shown to be temporary and self-resolving (McDonald *et al.* 2015a), and carrying out analyses at three months, which would identify these, would not be a meaningful addition. Furthermore, there are numerous studies that examine postpartum sexual health in the short term (Connolly *et al.* 2005, Chang *et al.* 2011). Secondly, descriptive statistics have shown that trends seen at nine months were of a similar course to those seen at twelve months. For this reason a decision was made to include the six and twelve month data only in the analysis. Thirdly, the majority of women (92%) had resumed sexual activity in the first six months, and the small number of women who resumed sexual activity after this would have made it impossible to carry out dependable analyses. Finally, the survey instrument did not collect data on satisfaction with sexual life and frequency of sexual intercourse at six months postpartum, so these data were unavailable for analyses.

4.4.1 Mode of birth as a risk factor for sexual health issues

Six months postpartum dyspareunia was significantly associated with vacuum birth compared with spontaneous vaginal birth (SVB) (OR 1.6, CI 95% 1.1-2.4, p=0.013). Women were less likely to experience dyspareunia six months after birth with elective CS compared to SVB (OR 0.5, CI 95% 0.3-0.9, p=0.03) with emergency CS protective of experiencing a loss of interest in sex six months postpartum (OR 0.6, CI 95% 0.4-0.9, p=0.027). Findings demonstrated an increased lack of vaginal lubrication associated with vacuum birth compared to SVB at six and twelve months postpartum but this did not reach statistical significance (Tables 4.26 – 4.31).

Table 4.26 Mode of birth as a risk factor for dyspareunia at six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	108/279	38.7	1.0 (ref.)			60/280	21.4	1.0 (ref.)		
Vacuum birth	83/163	50.9	1.6	1.1-2.4	**0.013**	47/164	28.7	1.5	0.9-2.3	0.086
Forceps birth	30/89	33.7	0.8	0.5-1.3	0.397	18/96	18.8	0.8	0.4-1.5	0.577
Elective CS	16/66	24.2	0.5	0.3-0.9	**0.03**	10/64	15.6	0.7	0.3-1.4	0.3
Emergency CS	61/181	33.7	0.8	0.5-1.2	0.277	31/181	17.1	0.8	0.5-1.2	0.258
Missing	54					47				
Total	298/832					166/832				

Table 4.27 Mode of birth as a risk factor for lack of vaginal lubrication at six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	122/285	42.8	1.0(ref.)			93/286	32.5	1.0(ref.)		
Vacuum birth	83/166	50	1.3	0.9-2.0	0.139	63/164	33	1.3	0.9-1.9	0.206
Forceps birth	36/92	39.1	0.9	0.5-1.4	0.535	33/96	34.4	1.1	0.7-1.8	0.738
Elective CS	22/65	33.8	0.7	0.4-1.2	0.187	20/64	31.3	0.9	0.5-1.7	0.845
Emergency CS	77/181	42.5	1.0	0.7-1.4	0.955	69/185	37.3	1.2	0.8-1.8	0.287
Missing	43					37				
Total	340/832					278/832				

Table 4.28 Mode of birth as a risk factor for loss of interest in sex at six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	145/285	50.9	1.0(ref.)			112/286	39.2	1.0(ref.)		
Vacuum birth	88/165	53.3	1.1	0.7-1.6	0.615	69/165	41.8	1.1	0.8-1.6	0.579
Forceps birth	40/95	42.1	0.7	0.4-1.2	0.139	40/96	41.7	1.1	0.7-1.8	0.664
Elective CS	25/67	37.3	0.6	0.3-1.0	0.047	29/65	44.6	1.2	0.7-2.1	0.419
Emergency CS	73/181	40.3	0.6	0.4-0.9	**0.027**	63/179	35.2	0.8	0.6-1.2	0.391
Missing	39					41				
Total	371/832					313/832				

Table 4.29 Mode of birth as a risk factor for non-resumption of sexual activity at three and six months postpartum

	3/12 postpartum					6/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	62/291	21.3	1.0(ref.)			18/291	6.2	1.0(ref.)		
Vacuum birth	41/170	24.1	1.1	0.7-1.8	0.485	10/171	5.8	0.9	0.4-2.0	0.883
Forceps birth	25/98	25.5	1.2	0.7-2.1	0.388	6/97	6.2	1.0	0.3-2.5	1.0
Elective CS	10/70	14.3	0.6	0.2-1.2	0.19	3/69	4.3	0.7	0.1-2.4	0.56
Emergency CS	37/186	19.9	0.9	0.5-1.4	0.711	12/188	6.4	1.0	0.4-2.1	0.931
No Partner	10					9				
Missing	7					7				
Total	165/832					49/832				

Table 4.30 Mode of birth as a risk factor for frequency of sexual activity at twelve months postpartum

	1-2 times per month					1-2 times per week				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	116/227	51.2	1.0(ref.)			108/272	39.7	1.0(ref.)		
Vacuum birth	82/140	58.6	1.3	0.8-2.0	0.164	58/162	35.8	0.8	0.5-1.2	0.419
Forceps birth	43/79	27	1.1	0.6-1.9	0.61	36/94	38.3	0.9	0.5-1.5	0.81
Elective CS	27/53	50.9	0.9	0.5-1.8	0.983	24/64	37.5	0.9	0.5-1.5	0.745
Emergency CS	62/144	43.1	0.7	0.4-1.1	0.131	87/181	48.1	1.4	0.9-2.0	0.079
Missing	189					59				
Total	330/832					313/832				

Table 4.31 Mode of birth as a risk factor for dissatisfaction with overall sexual life twelve months postpartum

Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Spontaneous vaginal birth	28/178	15.7	1.0(ref.)		
Vacuum birth	21/123	17.1	1.1	0.5-2.0	0.756
Forceps birth	10/65	15.4	0.9	0.4-2.1	0.948
Elective CS	8/44	18.2	1.1	0.5-2.8	0.693
Emergency CS	19/121	15.7	0.9	0.5-1.8	0.995
Missing	301				
Total	86/832				

4.4.2 Perineal trauma as a risk factor for sexual health issues

An association between loss of interest in sex and dyspareunia and 2nd degree and 3rd degree tears at six months postpartum compared to those who had an intact perineum, was demonstrated (Tables 4.32 and 4.34). A 3rd degree tear remained predictive of dyspareunia twelve months postpartum (OR 2.5, CI 95% 1.0-6.1, p=0.05). Having an episiotomy was also a significant risk factor for dyspareunia at six and twelve months postpartum (Table 4.32).

Women who had a 3rd degree tear were significantly more likely not to have resumed sexual activity at or by three months postpartum (OR 5.0, CI 95% 2.1-11.8, p>0.01) (Table 4.35). Women who had an episiotomy compared to an intact perineum were more likely to report engaging in sexual activity 1-2 times per month, twelve months after birth compared to those who had an intact perineum. Women who had a 2nd degree tear were less likely to engage in sexual activity 1-2 times per week compared to those with an intact perineum (Table 4.36).

There was no significant association between dissatisfaction with overall sexual life and any type of perineal trauma compared to an intact perineum; although women who had a 3rd degree tear were slightly more likely to report overall dissatisfaction with their sexual lives (OR 2.7, CI 95% 0.9-8.2, p=0.065) (Table 4.37).

Table 4.32 Perineal trauma as a risk factor for dyspareunia at six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Intact	77/252	30.6	1.0 (ref.)			40/250	16	1.0 (ref.)		
First degree tear	11/39	28.2	0.9	0.4-1.9	0.766	7/40	17.5	1.1	0.5-2.7	0.811
Second degree tear	66/161	41	1.6	1.0-2.3	**0.03**	35/158	22.2	1.5	0.9-2.5	0.119
Third degree tear	13/21	61.9	3.7	1.5-9.3	**0.005**	8/25	32	2.5	1.0-6.1	**0.05**
Episiotomy	121/281	43.1	1.7	1.2-2.5	**0.003**	69/288	24	1.6	1.1-2.6	**0.023**
Labial or vaginal wall tear	10/24	41.7	1.6	0.7-3.8	0.267	7/24	29.2	2.1	0.8-5.6	0.109
Missing	54					47				
Total	298/832					166/832				

Table 4.33 Perineal trauma as a risk factor for lack of vaginal lubrication at six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Intact	101/251	40.2	1.0 (ref.)			91/254	35.8	1.0 (ref.)		
First degree tear	16/39	41	1.0	0.5-2.1	0.926	14/42	33.3	0.89	0.5-1.8	0.754
Second degree tear	72/163	44.2	1.2	0.8-1.8	0.428	57/162	35.2	1.0	0.6-1.5	0.894
Third degree tear	12/23	52.2	1.6	0.7-3.8	0.269	9/24	37.5	1.0	0.4-2.6	0.87
Episiotomy	128/288	44.4	1.2	0.8-1.7	0.325	97/289	33.6	0.9	0.6-1.3	0.58
Labial or vaginal wall tear	11/25	44	1.2	0.5-2.7	0.715	10/24	41.7	1.3	0.5-3.0	0.57
Missing	43					37				
Total	340/832					278/832				

Table 4.34 Perineal trauma as a risk factor for loss of interest in sex six and twelve months postpartum

	6/12 postpartum					12/12 postpartum				
Mode of birth	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Intact	103/253	40.7	1.0 (ref.)			94/249	37.8	1.0 (ref.)		
First degree tear	17/41	41.5	1.0	0.5-2.0	0.928	19/42	45.2	1.4	0.7-2.6	0.358
Second degree tear	88/163	54	1.7	1.1-2.5	**0.008**	69/162	42.6	1.2	0.8-1.8	0.327
Third degree tear	15/24	62.5	2.4	1.0-5.8	**0.044**	9/25	36	0.9	0.4-2.2	0.863
Episiotomy	138/288	47.9	1.3	0.9-1.9	0.093	114/289	39.4	1.1	0.8-1.5	0.687
Labial or vaginal wall tear	10/24	41.7	1.0	0.4-2.4	0.927	8/24	33.3	0.8	0.3-2.0	0.67
Missing	39					41				
Total	371/832					313/832				

Table 4.35 Perineal trauma as a risk factor for non-resumption of sexual activity at three and six months postpartum

	3/12 postpartum					6/12 postpartum				
Mode of birth	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Intact	46/261	17.6	1.0 (ref.)			15/262	5.7	1.0 (ref.)		
First degree tear	9/43	20.9	1.2	0.5-2.7	0.602	1/43	2.3	0.3	0.05-3.0	0.371
Second degree tear	36/163	22.1	1.3	0.8-2.1	0.259	9/165	5.5	0.9	0.4-2.2	0.906
Third degree tear	13/25	52	5.0	2.1-11.8	**<0.001**	4/25	16	3.1	0.9-10.3	0.06
Episiotomy	67/297	22.6	1.3	0.8-2.0	0.149	18/295	6.1	1.0	0.5-2.1	0.851
Labial or vaginal wall tear	4/26	15.4	0.8	0.2-2.5	0.774	2/26	7.7	1.3	0.2-6.3	0.686
No Partner	10					9				
Missing	7					7				
Total	175/832					49/832				

Table 4.36 Perineal trauma as a risk factor for frequency of sexual activity at twelve months postpartum

	1-2 times per month					1-2 times per week				
Mode of birth	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Intact	90/199	45.2	1.0 (ref.)			114/249	45.8	1.0 (ref.)		
First degree tear	19/38	50	1.2	0.6-2.4	0.589	17/41	41.5	0.8	0.4-1.6	0.607
Second degree tear	61/124	49.2	1.1	0.7-1.8	0.487	56/156	35.9	0.6	0.4-1.0	**0.05**
Third degree tear	11/16	68.8	2.6	0.8-7.9	0.079	6/23	26.1	0.4	0.1-1.0	0.076
Episiotomy	139/245	56.7	1.5	1.0-2.3	**0.016**	109/281	38.8	0.7	0.5-1.0	0.104
Labial or vaginal wall tear	10/21	47.6	1.1	0.4-2.7	0.834	11/23	47.8	1.0	0.4-2.5	0.851
Missing	189					59				
Total	330/832					313/832				

Table 4.37 Perineal trauma as a risk factor for dissatisfaction with overall sexual life at twelve months postpartum

	12 months postpartum				
Mode of birth	n/total	%	Unadjusted OR	95% CI	p value
Intact	30/169	17.8	1.0 (ref.)		
First degree tear	2/29	6.9	0.3	0.07-1.5	0.159
Second degree tear	14/103	13.6	0.7	0.3-1.4	0.367
Third degree tear	6/16	37.5	2.7	0.9-8.2	0.065
Episiotomy	32/202	15.8	0.8	0.5-1.5	0.624
Labial or vaginal wall tear	2/12	16.7	0.9	0.1-4.4	0.924
Missing	301				
Total	86/832				

4.4.3 Breastfeeding as a risk factor for sexual health issues

Six months postpartum women who were breastfeeding were more likely to have dyspareunia than those not breastfeeding (OR 1.9, CI 95% 1.3-2.6, p<0.001) (Table 4.38). Breastfeeding is associated with a lack of vaginal lubrication at three and six months postpartum (Table 4.39). Experiencing a loss of interest in sex three months (OR 2.1, CI 95% 1.5-2.9, p<0.001) and six months (OR 1.7, CI 95% 1.3-2.3, p=0.01) postpartum was significantly associated with postpartum breastfeeding. At twelve months postpartum women who were breastfeeding, compared with those who were not breastfeeding, were more likely to have an increased loss of interest in sex, but this association was not statistically significant (Table 4.40).

Breastfeeding was also identified as a risk factor for having no sexual activity at, or by, three months after birth (OR 2.6, CI 95% 1.7-3.9, p<0.001). Similar results were evident at six months postpartum (OR 3.5, CI 95% 1.7-7.3, p=0.00), although, this association was not evident at twelve months (Table 4.41). It should be noted, however, that the numbers in the twelve months univariate logistic regression were very small (n = 4).

Lastly, women who were breastfeeding were less likely to engage in sexual activity 1-2 times per week twelve months after birth (OR 0.5, CI 95% 03.-0.8, p=0.009) and were significantly more dissatisfied with their overall sexual life (OR 1.9, CI 95% 1.1-3.3, p=0.001) (Tables 4.42 and 4.43).

Table 4.38 Breastfeeding as a risk factor for dyspareunia at three, six and twelve months postpartum

	3 months postpartum					6 months postpartum					12 months postpartum				
Breastfeeding	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	199/359	52.4	1.3	0.9-1.8	0.131	139/292	47.6	1.9	1.3-2.6	**<0.001**	33/133	24.8	1.2	0.7-1.8	0.477
No	120/244	49.2	1.0(ref.)			101/310	32.6	1.0(ref.)			104/475	21.9	1.0(ref.)		
Missing*	229					230					224				
Total	319/832					240/832					137/832				

*includes women who commenced breastfeeding but had stopped by measurement time point

Table 4.39 Breastfeeding as a risk factor for lack of vaginal lubrication at three, six and twelve months postpartum

	3 months postpartum					6 months postpartum					12 months postpartum				
Breastfeeding	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	191/367	52	1.9	1.4-2.8	**<0.001**	159/295	52.9	1.7	1.2-2.3	**0.001**	55/135	40.7	1.3	0.9-1.9	0.221
No	88/249	35.3	1.0(ref.)			126/315	40	1.0(ref.)			168/480	35	1.0(ref.)		
Missing*	216					222					217				
Total	279/832					282/832					233/615				

*includes women who commenced breastfeeding but had stopped by measurement time point

Table 4.40 Breastfeeding as a risk factor for loss of interest in sex at three, six and twelve months postpartum

	3 months postpartum					6 months postpartum					12 months postpartum				
Breastfeeding	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	206/366	56.3	2.1	1.5-2.9	**<0.001**	168/298	56.4	1.7	1.3-2.3	**0.001**	62/135	45.9	1.4	1.0-2.1	0.064
No	93/243	38.3	1.0(ref.)			134/314	43.3	1.0(ref.)			117/477	37.1	1.0(ref.)		
Missing*	223					220					220				
Total	299/832					304/832					239/832				

*includes women who commenced breastfeeding but had stopped by measurement time point

Table 4.41 Breastfeeding as a risk factor for non-resumption of sexual activity at three, six and twelve months postpartum

	3 months postpartum					6 months postpartum					12 months postpartum				
Breastfeeding	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	119/424	28.1	2.6	1.7-3.9	**<0.001**	32/310	10.3	3.5	1.7-7.3	**0.001**	4/138	2.9	1.7	0.5-6.0	0.349
No	35/269	13	1.0(ref.)			10/318	3.1	1.0(ref.)			8/487	1.6	1.0(ref.)		
No partner	10					9					10				
Missing*	129					195					197				
Total	154/832					42/832					12/832				

*includes women who commenced breastfeeding but had stopped by measurement time point

Table 4.42 Breastfeeding as a risk factor for frequency of sexual activity at twelve months postpartum

	1-2 times per month					1-2 times per week				
Breastfeeding	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Yes	78/130	60	1.4	0.9-2.1	0.068	40/130	30.8	0.5	0.3-0.8	**0.009**
No	239/469	51	1.0(ref.)			204/469	43.5	1.0(ref.)		
Missing*	233					233				
Total	317/832					244/832				

*includes women who commenced breastfeeding but had stopped by measurement time point

Table 4.43 Breastfeeding as a risk factor for dissatisfaction with overall sexual life at twelve months postpartum

	1-2 per month				
Breastfeeding	n/total	%	Unadjusted OR	95% CI	p value
Yes	26/107	24.3	1.9	1.1-3.3	**0.001**
No	51/367	13.9	1.0(ref.)		
Missing*	358				
Total	77/832				

*includes women who commenced breastfeeding but had stopped by measurement time point

4.4.4 Perception of body image as a risk factor for sexual health issues

Never being satisfied with one's body image compared to always being satisfied emerged as a risk factor for a loss of interest in sex at six months postpartum (OR 1.9, CI 95% 1.2-3.0, p=0.006). This association was even more pronounced at twelve months (OR 3.5, CI 95% 2.1-5.7, p<0.001) (Table 4.46). Being sometimes satisfied with one's body image increased the likelihood of experiencing a loss of interest in sex at twelve months (Table 4.46) and being dissatisfied with one's overall sexual life at twelve months postpartum (Table 4.49). Women who were never satisfied with their body image compared to those who were always satisfied were more likely to report dissatisfaction with overall sexual life twelve months after birth (OR 9.6, CI 95% 1.0-22.9, p<0.001) (Table 4.49).

An association was found between engaging in sexual activity 1-2 times per month twelve months after birth and being sometimes satisfied and never satisfied with one's body image, while women who were never satisfied with their body image were less likely to engage in sexual activity 1-2 times per week (Table 4.48).

Table 4.44 Perception of body image as a risk factor for dyspareunia at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Perception of body image	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Always satisfied	56/141	39.7	1.0 (ref.)			34/170	20	1.0 (ref.)		
Sometimes satisfied	175/471	37.2	0.9	0.6-1.3	0.582	106/482	22	1.1	0.7-1.7	0.587
Never satisfied	66/156	42.3	1.1	0.7-1.8	0.65	26/119	21.8	1.1	0.6-2.0	0.703
Missing	64					61				
Total	297/832					166/832				

Table 4.45 Perception of body image as a risk factor for a lack of vaginal lubrication at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Perception of body image	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Always satisfied	51/143	35.7	1.0 (ref.)			54/171	31.6	1.0 (ref.)		
Sometimes satisfied	214/478	44.8	1.5	0.9-2.1	0.054	170/491	34.6	1.1	0.8-1.7	0.469
Never satisfied	70/157	44.6	1.1	0.9-2.3	0.116	49/118	41.5	1.5	0.9-2.5	0.083
Missing	54					52				
Total	335/832					273/832				

Table 4.46 Perception of body image as a risk factor for a loss of interest in sex at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Perception of body image	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Always satisfied	57/144	39.6	1.0 (ref.)			50/172	29.1	1.0 (ref.)		
Sometimes satisfied	223/481	46.4	1.3	0.9-1.9	0.152	188/485	38.8	1.5	1.0-2.2	**0.024**
Never satisfied	87/157	55.4	1.9	1.2-3.0	**0.006**	70/119	58.8	3.5	2.1-5.7	**<0.001**
Missing	50					56				
Total	367/832					308/832				

Table 4.47 Perception of body image as a risk factor for non-resumption of sexual activity at three and six months postpartum

	3 months postpartum					6 months postpartum				
Perception of body image	n/total	%	Unadjusted OR	95% CI	p value	n/total	%	Unadjusted OR	95% CI	p value
Always satisfied	22/126	17.5	1.0 (ref.)			7/146	4.8	1.0 (ref.)		
Sometimes satisfied	104/472	22	1.3	0.8-2.2	0.265	27/491	5.5	1.1	0.4-2.7	0.74
Never satisfied	49/212	23.1	1.4	0.8-2.4	0.219	14/168	8.3	1.8	0.7-4.6	0.216
No partner	10					9				
Missing	12					18				
Total	175/832					48/832				

Table 4.48 Perception of body image as a risk factor for frequency of sexual activity at twelve months postpartum

	1-2 times per month					1-2 times per week				
Perception of body image	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Always satisfied	75/168	44.6	ref.(1.0)			78/168	46.4	ref.(1.0)		
Sometimes satisfied	258/479	53.9	1.4	1.0-2.0	**0.04**	194/479	40.5	0.7	0.5-1.1	0.181
Never satisfied	65/111	58.6	1.7	1.0-2.8	**0.023**	35/111	31.5	0.5	0.3-0.8	**0.014**
Missing	74					74				
Total	398/832					307/832				

Table 4.49 Perception of body image as a risk factor for dissatisfaction with overall sexual life at twelve months postpartum

Body image	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Always satisfied	7/131	5.3	ref. (1.0)		
Sometimes satisfied	54/358	15.1	3.1	1.3-7.1	**0.006**
Never satisfied	33/94	35.1	9.5	1.0-22.9	**<0.001**
Missing	249				
Total	94/832				

4.4.5 Pre-existing dyspareunia as a risk factor for sexual health issues

Experiencing pre-existing dyspareunia, that is dyspareunia before pregnancy, compared to no pre-existing dyspareunia, significantly increased the likelihood of developing several postpartum sexual health issues. These were dyspareunia at six and twelve months postpartum (Table 4.50), a lack of vaginal lubrication at six and twelve months (Table 4.51) and a loss of interest in sex at six and twelve months postpartum (Table 4.52). An association between having no sexual activity by three months postpartum and pre-existing dyspareunia was also found (OR 1.9, CI 95% 1.3-2.8, $p<0.001$). This association persisted six months postpartum (Table 4.53).

Twelve months after birth, having had pre-existing dyspareunia was a significant risk factor for being dissatisfied with one's overall sexual life (OR 1.9, CI 95% 1.2-3.0, $p=0.002$) compared to those who did not experience pre-existing dyspareunia (Table 4.55).

Table 4.50 Pre-existing dyspareunia as a risk factor for postpartum dyspareunia at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	126/234	53.8	2.5	1.8-3.5	**<0.001**	85/235	36.2	3.2	2.3-4.6	**<0.001**
No	168/533	31.5	1.0 (ref.)			80/539	14.8	1.0 (ref.)		
Missing	65					58				
Total	294/832					165/832				

Table 4.51 Pre-existing dyspareunia as a risk factor for a lack of vaginal lubrication at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	123/242	50.8	1.6	1.1-2.1	**0.004**	106/237	44.7	1.8	1.3-2.5	**<0.001**
No	213/536	39.7	1.0 (ref.)			168/547	30.7	1.0 (ref.)		
Missing	54					48				
Total	336/832					274/832				

Table 4.52 Pre-existing dyspareunia as a risk factor for a loss of interest in sex at six and twelve months postpartum

	6 months postpartum					12 months postpartum				
Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	127/242	52.5	1.4	1.0-1.9	**0.025**	110/237	46.4	1.5	1.1-2.0	**0.01**
No	234/541	43.8	1.0 (ref.)			199/544	36.6	1.0 (ref.)		
Missing	49					51				
Total	364/832					309/832				

Table 4.53 Pre-existing dyspareunia as a risk factor for non-resumption of sexual activity at three and six months postpartum

	3 months postpartum					6 months postpartum				
Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	73/247	29.6	1.9	1.3-2.8	**<0.001**	22/249	8.8	1.8	1.0-3.3	**0.032**
No	97/555	17.5	1.0 (ref.)			27/555	4.9	1.0 (ref.)		
No partner	10					9				
Missing	20					19				
Total	170/832					49/832				

Table 4.54 Pre-existing dyspareunia as a risk factor for frequency of sexual activity at twelve months postpartum

	1-2 times per month					1-2 times per week				
Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**p value**
Yes	130/226	57.5	1.3	0.9-1.7	0.092	84/226	37.2	0.8	0.6-1.1	0.243
No	273/537	50.8	1.0 (ref.)			224/537	41.7	1.0 (ref.)		
Missing	69					69				
Total	403/832					308/832				

Table 4.55 Pre-existing dyspareunia as a risk factor for dissatisfaction with overall sexual life at twelve months postpartum

Pre-existing dyspareunia	**n/total**	**%**	**Unadjusted OR**	**95% CI**	**95% CI**
Yes	45/193	23.3	1.9	1.2-3.0	**0.002**
No	52/391	13.3		1.0(ref.)	
Missing	248				
Total	97/832				

4.5 Multivariable logistic regression analysis assessing risk factors for sexual health issues

This section further addresses the objective:

ii) To identify the factors associated with sexual health issues.

Multivariate logistic regression analyses were conducted to adjust for confounding variables and obtain a more accurate effect measure of the potential risk factors for sexual health issues examined in this study. Multivariable logistic regression models were developed for the outcomes:

1) Dyspareunia measured at six and twelve months postpartum.
2) Lack of vaginal lubrication measured at six and twelve months postpartum.
3) Loss of interest in sexual activity measured at six and twelve months postpartum.
4) Resumption of sexual activity in the first three and six months measured at three and six months postpartum.
5) Engaging in sexual activity 1-2 times per month and 1-2 times per week measured at twelve months postpartum.
6) Dissatisfaction with overall sexual life measured at twelve months postpartum.

4.5.1 Multivariable logistic regression of postpartum dyspareunia at six and twelve months postpartum

The model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The Omnibus Test of Model Coefficients (testing for 'goodness') was statistically significant (X^2=243.7, df=13, p<0.001) indicating good performance of the model and the Hosmer and Lemeshow Test also supported the model (X^2=1.9, df=8, p=0.983) with a non-significant result, p>0.05 (as this tests for poor fit) at six months. The model was also supported for the twelve months analysis; the Omnibus Test of Model Coefficients (X^2=58.4, df=19, p<0.001) and the Hosmer and Lemeshow Test (X^2=2.1, df=8, p=0.979) results being satisfactory.

Adjusting for the effects of the included variables on each other, pre-existing dyspareunia (AOR 2.6, CI 95% 1.8-3.6, p<0.001), breastfeeding (AOR 1.9, CI 95% 1.3-2.7, p<0.001) and a 3rd degree tear (AOR 4.1, CI 95% 1.3-12.6, p=0.013) were all identified as factors significantly

associated with dyspareunia at six months postpartum (Table 4.55). At twelve months postpartum, the association between dyspareunia and pre-existing dyspareunia was even more pronounced (OR 3.8, CI 95% 2.5-5.8, $p<0.001$). Age was also identified as being predictive of dyspareunia at twelve months postpartum with women in the older age group category (35+ years) less likely to experience dyspareunia compared to younger women (AOR 0.4, CI 95% 0.2-0.8, $p=0.009$) (Table 4.56).

Table 4.56 Multivariable logistic regression of postpartum dyspareunia at six and twelve months postpartum

Associated factors		6/12 postpartum			12/12 postpartum		
		AOR	95% CI	p value	AOR	95% CI	p value
Age Groups	18-29 years	1.0 (ref.)			1.0 (ref.)		
	30-34 years	0.7	0.4-1.0	0.059	0.7	0.4-1.2	0.222
	35+ years	0.7	0.4-1.0	0.096	0.4	0.2-0.8	**0.009**
BMI Groups	Ideal	1.0 (ref.)			1.0 (ref.)		
	Overweight	1.0	0.6-1.6	0.947	0.9	0.5-1.7	0.773
	Obese	1.1	0.6-1.8	0.841	0.8	0.4-1.7	0.545
	Underweight	1.4	0.7-2.7	0.325	1.4	0.6-3.4	0.387
	Unknown BMI	0.7	0.3-1.4	0.366	0.9	0.4-2.5	0.926
Highest level of education	No degree	1.0 (ref.)			1.0 (ref.)		
	Primary degree	1.4	0.9-2.1	0.11	1.3	0.7-2.3	0.35
	Postgrad. qualification	1.1	0.7-1.6	0.698	1.3	0.8-2.3	0.283
Pre-existing dyspareunia	Yes	2.6	1.8-3.6	**<0.001**	3.8	2.5-5.8	**<0.001**
Mode of birth	SVB	1.0 (ref.)			1.0 (ref.)		
	Vacuum birth	1.7	0.9-2.7	0.053	1.5	0.7-2.8	0.225
	Forceps birth	0.7	0.3-1.4	0.384	0.8	0.3-1.8	0.611
	Elective CS	0.7	0.3-1.7	0.491	1.9	0.6-5.7	0.255
	Emergency CS	1.1	0.6-2.2	0.605	1.537	0.6-3.7	0.344
Perineal trauma	Intact*	1.0 (ref.)			1.0 (ref.)		
	2nd degree	1.6	0.8-3.1	0.133	1.4	0.5-3.4	0.466
	3rd degree	4.1	1.3-12.3	**0.013**	2.7	0.7-10.1	0.143
	Episiotomy	1.4	0.7-2.7	0.336	1.5	0.6-3.6	0.374
Still breastfeeding	Yes	1.9	1.3-2.7	**<0.001**	1.1	0.7-1.9	0.56
Perception of body image	Always satisfied	1.0 (ref.)			1.0 (ref.)		0.993
	Sometimes satisfied	0.9	0.6-1.5	0.96	1.0	0.6-1.7	0.941
	Never satisfied	1.4	0.8-2.4	0.211	1.0	0.5-2.2	0.905

* includes 1st degree tears and vaginal wall and labial tears

4.5.2 Multivariable logistic regression of lack of vaginal lubrication at six and twelve months postpartum

This model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The six month models were supported by the Omnibus Test of Model Coefficients (X^2=56.9, df=19, p<0.001) and the Hosmer and Lemeshow Tests (X^2=6.0, df=8, p=0.649); the twelve month models are less so. However, the twelve month results are broadly consistent with the six months results with less significant results seen at twelve months, which would explain why the Omnibus Test of Model Coefficients (X^2=24.3, df=19, p=0.185) is above 0.05, indicating a somewhat poor, but acceptable, fit. The Hosmer and Lemeshow Test (X^2=610.1 df=8 p=0.255) is low but supports the twelve month model.

At six months postpartum, having pre-existing dyspareunia, still breastfeeding, and being sometimes satisfied or never being satisfied with one's body image, were all significantly associated with a lack of vaginal lubrication (Table 4.57). Pre-existing dyspareunia, however, remained the only significant risk factor for dyspareunia at twelve months postpartum (AOR 1.7, CI 95% 1.2-2.5, p=0.004).

Table 4.57 Multivariable logistic regression of lack of vaginal lubrication at six and twelve months postpartum

Associated factors		6/12 postpartum			12/12 postpartum		
		AOR	**95% CI**	**p value**	**AOR**	**95% CI**	**p value**
Age Groups	18-29 years	1.0 (ref.)			1.0 (ref.)		
	30-34 years	0.9	0.7-1.4	0.994	0.8	0.5-1.3	0.383
	35+ years	0.9	0.6-1.4	0.799	0.7	0.4-1.1	0.149
BMI Groups	Ideal	1.0 (ref.)			1.0 (ref.)		
	Overweight	0.5	0.3-0.8	**0.003**	0.7	0.3-1.1	0.129
	Obese	0.5	0.3-1.0	**0.038**	0.6	0.3-1.2	0.148
	Underweight	1.5	0.8-2.9	0.226	1.8	0.9-3.7	0.117
	Unknown BMI	0.6	0.3-1.2	0.182	0.9	0.4-2.0	0.896
Highest level of education	No degree	1.0 (ref.)			1.0 (ref.)		
	Primary degree	1.0	0.6-1.5	0.985	1.0	0.6-1.7	0.862
	Postgrad. qualification	1.1	0.8-1.7	0.496	1.2	0.8-2.0	0.332
Pre-existing dyspareunia	Yes	1.6	1.1-2.2	**0.005**	1.7	1.2-2.5	**0.004**
Mode of birth	SVB	1.0 (ref.)			1.0 (ref.)		
	Vacuum birth	1.4	0.9-2.4	0.145	1.7	1.0-3.0	0.062
	Forceps birth	1.0	0.6-1.9	0.932	1.4	0.7-2.9	0.308
	Elective CS	0.7	0.3-1.5	0.339	1.2	0.5-2.9	0.677
	Emergency CS	0.9	0.5-1.7	0.874	1.3	0.6-2.7	0.405
Perineal trauma	Intact*	1.0 (ref.)			1.0 (ref.)		
	2nd degree	1.0	0.5-1.8	0.963	1.0	0.5-2.0	0.945
	3rd degree	1.4	0.5-3.7	0.55	1.2	0.4-3.8	0.787
	Episiotomy	0.8	0.4-1.5	0.449	0.7	0.3-1.4	0.325
Still breastfeeding	Yes	2.1	1.5-2.9	**<0.001**	1.3	0.8-1.9	0.27
Perception of body image	Always satisfied	1.0 (ref.)			1.0 (ref.)		
	Sometimes satisfied	1.8	1.2-2.8	**0.005**	1.2	0.7-1.9	0.444
	Never satisfied	2.4	1.4-4.0	**0.001**	1.5	0.8-2.8	0.233

* includes 1st degree tears and vaginal wall and labial tears

4.5.3 Multivariable logistic regression of loss of interest in sex at six and twelve months postpartum

This model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The models were supported by the Omnibus Test of Model Coefficients at six months (X^2=67.7, df=19, p<0.001) and the Hosmer and Lemeshow Test (X^2=8.1, df=8, p=0.415) and twelve months (X^2=30.7, df=19, p=0.044), (X^2=3.55, df=8, p=0.895) respectively.

Adjusting for the effects of the included variables, breastfeeding (AOR 2.2, CI 95% 1.6-3.0, p<0.001), being sometimes satisfied with one's body image (AOR 1.6, CI 95% 1.0-2.4, p=0.035) and never being satisfied with one's body image (AOR 2.8, CI 95% 1.6-4.6, p<0.001) were all identified as factors significantly associated with a loss of interest in sex at six months postpartum. At twelve months postpartum, the association between loss of interest in sex and never being satisfied with one's body image was even more pronounced (AOR 3.6, CI 95% 1.9-6.7, p<0.001) (Table 4.58).

Compared with women who did not have a primary degree, women who had a postgraduate qualification were more likely to experience a loss of interest in sex six months after birth (AOR 1.5, CI 95% 1.0-2.3, p=0.021) (Table 4.58).

Table 4.58 Multivariable logistic regression of loss of interest in sex at six and twelve months postpartum

Associated factors		6/12 postpartum AOR	95% CI	p value	12/12 postpartum AOR	95% CI	p value
Age Groups	18-29 years	1.0(ref.)			1.0(ref.)		
	30-34 years	0.8	0.6-1.2	0.396	1.0	0.7-1.6	0.836
	35+ years	0.8	0.5-1.3	0.436	1.2	0.7-2.0	0.441
BMI Groups	Ideal	1.0(ref.)			1.0(ref.)		
	Overweight	0.9	0.6-1.4	0.562	0.7	0.4-1.3	0.276
	Obese	1.6	1.0-2.8	0.07	0.8	0.4-1.5	0.42
	Underweight	0.9	0.5-1.9	0.982	0.9	0.4-2.0	0.882
	Unknown BMI	0.7	0.4-1.4	0.337	0.9	0.4-2.1	0.931
Highest level of education	No degree	1.0(ref.)			1.0(ref.)		
	Primary degree	1.0	0.7-1.5	0.916	1.3	0.8-2.0	0.326
	Postgrad. qualification	1.5	1.0-2.3	**0.021**	1.3	0.8-2.0	0.249
Pre-existing dyspareunia	Yes	1.4	1.0-1.9	**0.05**	1.3	0.9-1.9	0.127
Mode of birth	SVB	1.0(ref.)			1.0(ref.)		
	Vacuum birth	1.1	0.7-1.8	0.686	1.4	0.8-2.4	0.235
	Forceps birth	0.7	0.4-1.3	0.244	1.3	0.6-2.5	0.489
	Elective CS	0.7	0.4-1.6	0.446	1.0	0.4-2.2	0.933
	Emergency CS	0.8	0.4-1.5	0.464	0.7	0.3-1.3	0.266
Perineal trauma	Intact*	1.0(ref.)			1.0(ref.)		
	2nd degree	1.6	0.9-2.9	0.125	1.0	0.5-2.0	0.941
	3rd degree	2.6	0.9-7.2	0.065	0.9	0.3-2.8	0.853
	Episiotomy	1.2	0.6-2.3	0.595	0.7	0.3-1.4	0.272
Still breastfeeding	Yes	2.2	1.6-3.0	**<0.001**	1.6	1.0-2.4	**0.029**
Perception of body image	Always satisfied	1.0(ref.)			1.0(ref.)		
	Sometimes satisfied	1.6	1.0-2.4	**0.035**	1.5	0.9-2.3	0.082
	Never satisfied	2.8	1.6-4.6	**<0.001**	3.6	1.9-6.7	**<0.001**

* includes 1st degree tears and vaginal wall and labial tears

4.5.4 Multivariable logistic regression of resumption of sexual activity at three and six months postpartum

The model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The Omnibus Test of Model Coefficients was statistically significant (X^2=80.4, df=19, p<0.001) and the Hosmer and Lemeshow Test also supported the model (X^2=9.6, df=8, p=0.293) at three months and again at six months (X^2=45.1, df=19, p<0.001), (X^2=6.8, df=8, p=0.56) respectively.

Pre-existing dyspareunia (AOR 2.4, CI 95% 1.6-3.6, p<0.001), having a 3rd degree tear (AOR 5.7, CI 95% 1.8-18.6, p=0.004), breastfeeding (AOR 2.9, CI 95% 1.8-4.6, p<0.001) and never being satisfied with one's body image (AOR 1.9, CI 95% 1.0-3.8, p=0.049) were significant risk factors for not having resumed sexual activity at or by three months postpartum. Six months postpartum, pre-existing dyspareunia (AOR 1.9, CI 95% 1.6-3.5, p=0.035), 3rd degree tear (AOR 6.8, CI 95% 1.1-41.9, p=0.037), breastfeeding (AOR 4.2, CI 95% 2.2-7.6, p<0.001) and never being satisfied with one's body image (AOR 4.3, CI 95% 1.5-12.5, p=0.006) were significantly causal of not having resumed sexual activity at or by six months postpartum (Table 4.59).

Being thirty-five years or older also emerged as a risk factor for no sexual activity at or by three and six months after birth when compared to women under twenty-nine years of age. A 2nd degree tear and episiotomy have an AOR of nearly three of not having resumed sexual activity at or by six months postpartum, although this did not reach statistical significance (Table 4.59).

Table 4.59 Multivariable logistic regression of resumption of sexual activity at three and six months postpartum

Associated factors		3/12 postpartum AOR	95% CI	p value	6/12 postpartum AOR	95% CI	p value
Age Groups	18-29 years	1.0(ref.)			1.0(ref.)		
	30-34 years	1.8	1.1-3.1	0.031	1.1	0.5-2.4	0.774
	35+ years	3.3	1.8-5.8	**<0.001**	2.3	1.0-5.3	**0.043**
BMI Groups	Ideal	1.0(ref.)			1.0(ref.)		
	Overweight	0.8	0.4-1.5	0.491	0.6	0.3-1.6	0.327
	Obese	0.9	0.4-1.8	0.725	0.9	0.3-2.5	0.891
	Underweight	0.6	0.2-1.5	0.268	0.3	0.04-2.5	0.288
	Unknown BMI	0.9	0.4-2.2	0.832	0.7	0.2-2.6	0.616
Highest level of education	No degree	1.0(ref.)			1.0(ref.)		
	Primary degree	0.8	0.5-1.4	0.494	0.9	0.4-2.0	0.822
	Postgrad. qualification	1.0	0.6-1.6	0.905	0.6	0.3-1.3	0.212
Pre-existing dyspareunia	Yes	2.4	1.6-3.6	**<0.001**	1.9	1.6-3.5	**0.035**
Mode of birth	SVB	1.0(ref.)		0.603	1.0(ref.)		
	Vacuum birth	1.3	0.7-2.5	0.348	0.6	0.2-1.6	0.343
	Forceps birth	1.3	0.6-2.7	0.525	0.7	0.2-2.0	0.498
	Elective CS	0.6	0.2-1.7	0.294	1.0	0.1-6.4	0.996
	Emergency CS	1.0	0.5-2.3	0.928	1.6	0.3-7.3	0.566
Perineal trauma	Intact*	1.0(ref.)			1.0(ref.)		
	2nd degree	1.4	0.6-3.1	0.412	2.9	0.6-13.2	0.175
	3rd degree	5.7	1.8-18.6	**0.004**	6.8	1.1-41.9	**0.037**
	Episiotomy	1.0	0.4-2.3	0.983	2.6	0.5-12.5	0.241
Still breastfeeding	Yes	2.9	1.8-4.6	**<0.001**	4.2	2.2-7.9	**<0.001**
Perception of body image	Always satisfied	1.0(ref.)			1.0(ref.)		
	Sometimes satisfied	1	0.9-2.9	0.108	1.8	0.7-4.7	0.197
	Never satisfied	1.9	1.0-3.8	**0.049**	4.3	1.5-12.5	**0.006**

* includes 1st degree tears and vaginal wall and labial tears

4.5.5 Multivariable logistic regression of frequency of sexual activity at twelve months postpartum

The model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The Omnibus Test of Model Coefficients was statistically significant (X^2=31.4, df=19, p=0.036) and the Hosmer and Lemeshow Test supported the model (X^2=13.8, df=8, p=0.086) for the 1-2 times per month analysis on frequency of sexual activity. The model supported the 1-2 times per week analysis; the Omnibus Test of Model Coefficients (X^2=32.3, df=19, p=0.029) and the Hosmer and Lemeshow Test (X^2=7.8, df=8, p=0.448) results being satisfactory.

Women thirty-five years or older were more likely than 18-29 year olds to be engaging in sexual activity 1-2 times per month twelve months after birth (OR 1.8, CI 95% 1.1-2.9, p=0.017). Breastfeeding at twelve months (AOR 1.7, CI 95% 1.1-2.6, p=0.016) and being 'sometimes satisfied' with one's body image (AOR 1.6, CI 95% 1.0-2.4, p=0.04) were also linked with sexual activity 1-2 times per month. Conversely, still breastfeeding at twelve months (AOR 0.5, CI 95% 0.3-0.8, p=0.002) was a significant factor for being less likely to have sexual activity 1-2 times per week (Table 4.60).

Table 4.60 Multivariable logistic regression of frequency of sexual activity at twelve months postpartum

Associated factors		1-2 times per month			1-2 times per week		
		AOR	95% CI	p value	AOR	95% CI	p value
Age Groups	18-29 years	1.0 (ref.)			1.0 (ref.)		
	30-34 years	1.4	0.9-2.2	0.108	0.7	0.5-1.1	0.168
	35+ years	1.8	1.1-2.9	**0.017**	0.7	0.4-1.0	0.104
BMI Groups	Ideal	1.0 (ref.)			1.0 (ref.)		
	Overweight	1.0	0.6-1.6	0.943	1.1	0.7-1.8	0.709
	Obese	1.3	0.7-2.4	0.447	0.8	0.4-1.6	0.538
	Underweight	0.8	0.4-1.7	0.542	1.4	0.7-2.9	0.399
	Unknown BMI	0.7	0.3-1.5	0.37	1.45	0.7-3.3	0.346
Highest level of education	No degree	1.0 (ref.)			1.0 (ref.)		
	Primary degree	1.2	0.8-1.9	0.435	1.0	0.6-1.6	0.912
	Postgrad. qualification	1.2	0.8-1.9	0.32	0.9	0.6-1.4	0.683
Pre-existing dyspareunia	Yes	1.2	0.8-1.8	0.265	0.8	0.6-1.2	0.343
Mode of birth	SVB	1.0 (ref.)			1.0 (ref.)		
	Vacuum birth	1.2	0.7-2.0	0.596	0.7	0.4-1.3	0.259
	Forceps birth	0.9	0.4-1.7	0.699	1.0	0.5-2.0	0.943
	Elective CS	0.7	0.3-1.6	0.375	1.2	0.5-2.3	0.645
	Emergency CS	0.7	0.3-1.4	0.316	1.6	0.8-3.2	0.194
Perineal trauma	Intact*	1.0 (ref.)			1.0 (ref.)		
	2nd degree	0.8	0.4-1.6	0.494	0.9	0.4-1.8	0.719
	3rd degree	3.2	0.8-12.0	0.086	0.3	0.1-1.3	0.105
	Episiotomy	1.1	0.5-2.3	0.783	1.0	0.5-2.2	0.854
Still breastfeeding	Yes	1.7	1.1-2.6	**0.016**	0.5	0.3-0.8	**0.002**
Perception of body image	Always satisfied	1.0 (ref.)			1.0 (ref.)		
	Sometimes satisfied	1.6	1.0-2.4	**0.04**	0.8	0.5-1.2	0.214
	Never satisfied	1.7	0.9-3.2	0.113	0.5	0.3-1.0	0.067

* includes 1st degree tears and vaginal wall and labial tears

4.5.6 Multivariable logistic regression analysis of dissatisfaction with overall sexual life at twelve months postpartum

The model contained the variables: age, BMI, level of education, pre-existing dyspareunia, mode of birth, perineal trauma, breastfeeding and perception of body image. The Omnibus Test of Model Coefficients was statistically significant (X^2=63.3, df=19, p<0.001) and the Hosmer and Lemeshow Test also supported the model (X^2=8.9, df=8, p=0.345).

Being thirty-five years or older (AOR 2.5, CI 95% 1.1-5.7, p=0.028), having pre-existing dyspareunia (AOR 1.8, CI 1.0-3.2, p=0.042), a 3rd degree tear (AOR 9.5, CI 95% 1.9-47.4, p=0.006), still breastfeeding (AOR 3.3, CI 95% 1.7-6.3, p<0.001) and being 'sometimes satisfied' (AOR 5.3, CI 95% 2.0-14.0, p=0.001) and 'never satisfied' (AOR 19.7, CI 6.4-60.7, p=<0.001) with one's body image were all identified as significantly associated risk factors for being dissatisfied with one's overall sexual life twelve months after birth (Table 4.61).

Table 4.61 Multivariable logistic regression of dissatisfaction with overall sexual life at twelve months postpartum

Associated factor		AOR	95% CI	p value
Age Groups	18-29 years	1.0(ref.)		
	30-34 years	1.4	0.7-3.0	0.356
	35+ years	2.5	1.1-5.7	**0.028**
BMI Groups	Ideal	1.0(ref.)		
	Overweight	0.8	0.4-1.7	0.532
	Obese	0.8	0.3-2.0	0.579
	Underweight	2.1	0.6-7.3	0.232
	Unknown BMI	0.3	0.05-1.8	0.19
Highest level of education	No degree	1.0(ref.)		
	Primary degree	0.7	0.3-1.7	0.477
	Postgrad. qualification	0.9	0.4-1.9	0.85
Pre-existing dyspareunia	Yes	1.8	1.0-3.2	**0.042**
Mode of birth	SVB	1.0(ref.)		
	Vacuum birth	0.9	0.4-2.5	0.885
	Forceps birth	0.6	0.2-1.9	0.394
	Elective CS	0.5	0.1-1.9	0.321
	Emergency CS	0.7	0.2-2.1	0.566
Perineal trauma	Intact*	1.0(ref.)		
	2nd degree	0.8	0.3-2.3	0.642
	3rd degree	9.5	1.9-47.4	**0.006**
	Episiotomy	0.8	0.3-2.4	0.676
Still breastfeeding	Yes	3.3	1.7-6.3	**<0.001**
Perception of body image	Always satisfied	1.0(ref.)		
	Sometimes satisfied	5.3	2.0-14.0	**0.001**
	Never satisfied	19.7	6.4-60.7	**<0.001**

* includes 1st degree tears and vaginal wall and labial tears

4.6 Health service-seeking behaviour of women experiencing sexual health issues

This section addresses the objective:

e) To identify and explore the health service-seeking behaviour of a subsample of nulliparous women experiencing sexual health issues.

This objective is further addressed in Phase 2 of this study during the qualitative one-to-one interviews with a subsample of women exploring their sexual health since the birth of their first baby. For women who reported on different sexual health issues, surveys sought information as to the types of health professionals that women discussed their sexual health

issues with. Women were asked 'have you discussed any of the above issues with anyone?' (referring to the sexual health issues in Section 4.3.1). If women indicated that they had, a list was provided for them to indicate with whom they had discussed their sexual health issue (more than one could be indicated):

General practitioner/local doctor (GP)

Public health nurse[14] (PHN)

GP practice nurse

Midwife

Obstetrician/Gynaecologist

Physiotherapist

Other professional

Women could also indicate if they discussed their sexual health issues with their partner, friend, sister, mother or other. To achieve objective v), the data on discussing sexual health issues with a health professional only is presented here.

Findings are presented using frequencies (n) and percentages (%). There are no assumptions made regarding missing data, and the findings are based on the numbers responding to the items regarding their health services-seeking behaviour at each survey time point. Tables 4.62 to 4.67 illustrate the number of women who spoke to a health professional (n), alongside the total number of women experiencing each sexual health issue (total) as a percentage (%) at each postnatal time point. It is evident that few women discussed their sexual health issues with their GP, PHN, GP practice nurse, Obstetrician and/or Gynaecologist, Physiotherapist, Midwife or other health professional during the first twelve months postpartum. Other health professionals described included one woman discussed her sexual health issues with a psychotherapist (six months postpartum), another woman indicated she discussed her sexual health issues with a counsellor (twelve months postpartum).

[14] The Public health nurse (PHN) is a community based nurse who provides one postnatal home visit within seventy-two hours after birth to assess maternal and baby's well-being. The PHN then assesses baby/child development for the first three years of life; at three months, seven months, two and three years.

Table 4.62 Health service -seeking behaviour of women experiencing dyspareunia

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Dyspareunia	GP	12/339 (3.5)	4/236 (1.7)	10/186 (5.3)	4/129 (3)
	PHN	0/339	1/236 (0.4)	2/186 (1.1)	1/129 (0.8)
	GP practice nurse	2/339 (0.6)	1/236 (0.4)	0/186	0/129
	Obs/ Gynae	5/339 (1.5)	4/236 (1.7)	3/186 (1.6)	1/129 (0.8)
	Physio	2/339 (0.6)	2/236 (0.8)	1/186 (0.5)	1/129 (0.8)
	Midwife	2/339 (0.6)	NA	NA	NA
	Other	1/339 (0.3)	1/236 (0.4)	0/186	1/129 (0.8)

NA not asked in survey[15]

Table 4.63 Health service-seeking behaviour of women experiencing a lack of vaginal lubrication

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Lack of vaginal lubrication	GP	7/298 (1.1)	3/283 (1.1)	5/245 (2)	4/233 (1.7)
	PHN	0/298	2/283 (0.7)	2/245 (0.8)	1/233 (0.4)
	GP practice nurse	0/298	1/283 (0.3)	0/245	1/233 (0.4)
	Obs/ Gynae	4/298 (0.6)	3/283 (1.1)	2/245 (0.8)	2/233 (0.8)
	Physio	1/298 (0.1)	1/283 (0.3	0/245	0/233
	Midwife	1/298 (0.1)	NA	NA	NA
	Other	0/298	1/283 (0.3)	0/245	0/233

NA not asked in survey

[15] Discussing sexual health issues with a midwife was not asked at six, nine and twelve months postpartum as women would be outside of maternity services at those time points.

Table 4.64 Health service-seeking behaviour of women experiencing difficulty in reaching orgasm

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Difficulty reaching orgasm	GP	0/151	1/183 (0.5)	0/148	0/140
	PHN	0/151	0/183	0/148	0/140
	GP practice nurse	0/151	0/183	0/148	0/140
	Obs/ Gynae	0/151	0/183	0/148	0/140
	Physio	0/151	0/183	0/148	0/140
	Midwife	0/151	NA	NA	NA
	Other	0/151	0/183	0/148	0/140

NA not asked in survey

Table 4.65 Health service-seeking behaviour of women experiencing vaginal tightness

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Vaginal tightness	GP	5/237 (2.1)	4/200 (2)	5/145 (3.4)	3/140 (2.1)
	PHN	0/237	1/200 (0.5)	1/145 (0.7)	1/140 (0.7)
	GP practice nurse	0/237	1/200 (0.5)	0/145	1/140 (0.7)
	Obs/ Gynae	3/237 (1.3)	1/200 (0.5)	2/145 (1.4)	0/140
	Physio	1/237 (0.4)	3/200 (1.5)	1/145 (0.7)	2/140 (1.4)
	Midwife	1/237 (0.4)	NA	NA	NA
	Other	1/237 (0.4)	1/200 (0.5)	0/145	0/140

NA not asked in survey

Table 4.66 Health service-seeking behaviour of women experiencing vaginal looseness/lack of muscle tone

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Vaginal looseness / lack of muscle tone	GP	1/89 (1.1)	0/79	0/58	0/53
	PHN	0/89	0/79	0/58	0/53
	GP practice nurse	0/89	0/79	0/58	0/53
	Obs/ Gynae	1/89 (1.1)	0/79	1/58 (1.7)	0/53
	Physio	1/89 (1.1)	0/79	0/58	0/53
	Midwife	0/89	NA	NA	NA
	Other	0/89	0/79	0/58	0/53

NA not asked in survey

Table 4.67 Health service-seeking behaviour of women experiencing a loss of interest in sex

Sexual health issue	Health professional consulted	3 months n/total (%)	6 months n/total (%)	9 months n/total (%)	12 months n/total (%)
Loss of interest in sex	GP	8/306 (2.6)	3/303 (0.9)	3/273 (1)	2/260 (0.8)
	PHN	0/306	1/303 (0.3)	1/273 (0.4)	0/260
	GP practice nurse	0/306	1/303 (0.3)	0/273	0/260
	Obs/ Gynae	2/306 (0.6)	1/303 (0.3)	0/273	2/260 (0.8)
	Physio	0/306	0/303	1/273 (0.4)	2/260 (0.8)
	Midwife	0/306	NA	NA	NA
	Other	0/306	0/303	0/273	1/260 (0.4)

NA not asked in survey

4.7 Conclusion

This chapter presented the findings of Phase 1 of this study. These findings describe the prevalence and persistence of sexual health issues in primiparous women up to twelve months postpartum. The findings also identify significantly associated risk factors for sexual health issues postpartum and describe the health service-seeking behaviour of women experiencing such issues. Sexual health issues such as dyspareunia, lack of vaginal lubrication, loss of interest in sex, delayed resumption of sexual activity and dissatisfaction with overall sexual life, were commonly experienced by women after birth. For many, however, they resolved by 9-12 months after birth. Pre-pregnancy dyspareunia, breastfeeding and a poor perception of one's body image were significant risk factors for persistent sexual health issues at six and twelve

months postpartum and being dissatisfied with one’s overall sexual life twelve months after birth. Being thirty-five years or older was predictive of delayed resumption of sexual activity beyond three and six months postpartum, but was seen to be protective of experiencing dyspareunia twelve months after birth. Very few women discussed their sexual health issues with a health professional.

Chapter 5 Women's experience of their sexual health after the birth of their first baby

5.1 Introduction

This chapter presents the qualitative findings from Phase 2 of this study, which were generated from one-to-one interviews with twenty-one first-time mothers. The narratives are presented under six themes (Figure 5.1), and represent an account of the women's experiences of their sexual health after the birth of their first baby. In order to present a rich account of these narratives, women's own words are presented in italics. Excerpts from each woman's narrative were used in presenting the findings; additional extracts that supported these findings were removed from this chapter during editing (Appendix 27). To uphold anonymity, pseudonyms have been used for the women, their partners and babies in reporting these findings. Geographical name places have also been changed. Interviews ranged in length from thirty-five minutes to one hour and fourteen minutes (mean fifty-five minutes). The longest interview began with the woman saying '*I don't think it'll be a long interview, there isn't much to say really about my sexual relationship*'.

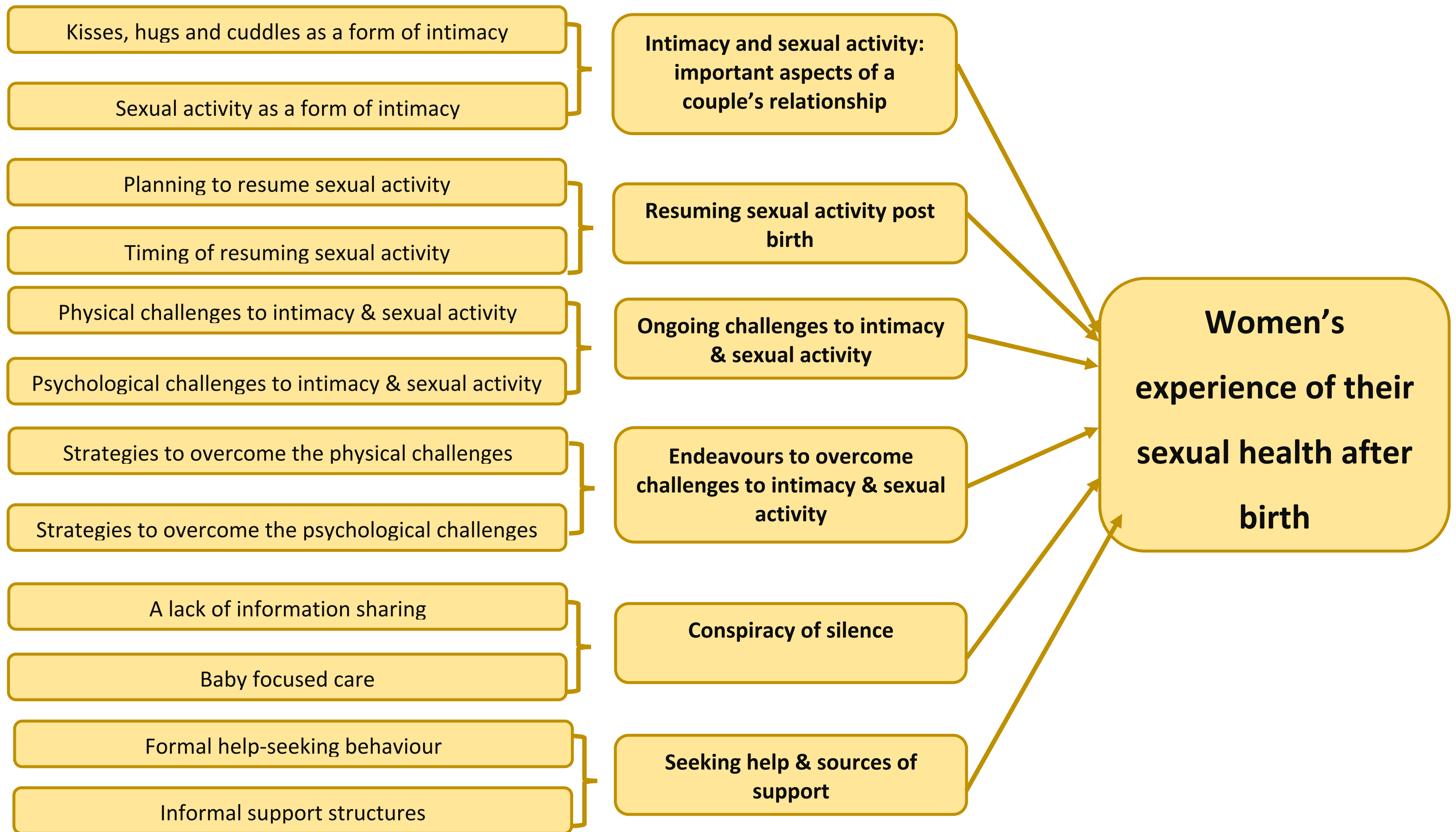

Figure 5.1 Women's experience of their sexual health after the birth of their first baby

5.1.1 Demographics of women interviewed

Twenty-one women participated in the interviews representing a subset of the study sample that participated in Phase 1 of this study. Their mean age was thirty-two years old (range 22-43 years). The age of the baby ranged from 23-35 months (mean twenty-seven months). All women were in paid employment prior to getting pregnant, eighteen returned to paid employment after maternity leave, and three chose to stay at home. The majority were from Ireland (fifteen), two were from Poland, one from Italy, one from the Netherlands, one from the Czech Republic and one woman was born in England. Four of the fifteen women from Ireland were from Dublin, six were from elsewhere in Ireland but had been living in Dublin for many years studying and/or working and five were from and lived in counties surrounding Dublin (i.e. counties Meath, Westmeath and Kildare). All twenty-one were in heterosexual relationships; eighteen were married to the father of their baby, one was getting married the year following the interview, another had just met their partner and was at an early stage in their relationship when she became pregnant and the remaining woman was in a long-term relationship with her partner. Eight women had a spontaneous vaginal birth, four had an elective caesarean section (CS), four had a forceps birth, three had a vacuum birth and two women had an emergency CS. Varying degrees of perineal trauma were experienced by the group; seven had an episiotomy (one woman's episiotomy extended), four had a 2nd degree tear (these were all sutured), two had labial and/or vaginal wall tears (unstutured), one had a 1st degree tear (unsutured) and one woman had an 3rd degree tear, a hymneal tear and bilateral vaginal wall tears. Six women had an intact perineum, all of whom had had CS births. Table 5.1 provides a summary of women's demographic details.

The sampling matrix outlined in Section 3.4.1.1 illustrates that not all women interviewed experienced sexual health issues twelve months postpartum and eight indicated they were either very satisfied or moderately satisfied with their overall sexual life twelve months after birth.

Table 5.1 Women's demographic details

Pseudonym	Age	Mode of birth	Perineal trauma	Age of index baby	Parity now	Country of birth	Relationship status	Education level
Sally	38	EM CS	Intact	24 months	2nd baby born	Ireland	Married	Not answered
May	24	Vacuum	Episiotomy	23 months	No more pregnancies	Ireland	Long term relationship	School 2nd level
Joanna	30	SVD	2nd degree	24 months	No more pregnancies	Poland	Married	UG degree
Aoibhe	29	El CS	Intact	25 months	2nd baby born	Ireland	Married	PG degree
Sarah	36	Vacuum	2nd degree	25 months	No more pregnancies	Ireland	Married	PG degree
Anna	34	El CS	Intact	25 months	Pregnant at time of interview	Netherlands	Married	PG degree
Rose	27	Vacuum	Episiotomy	25 months	Pregnant at time of interview	Ireland	Married	Apprenticeship
Niamh	32	SVD	2nd degree	25 months	No more pregnancies	Ireland	Married	Cert or Diploma
Fiona	37	EM CS	Intact	25 months	2nd baby born	Ireland	Married	PG Degree
Fabienne	32	Forceps	Episiotomy	28 months	2nd baby born	Ireland	Married	PG degree
Caroline	33	SVD	Labial/vaginal wall tear	27 months	2nd baby born	Czech Republic	Married	PG degree
Nyree	33	SVD	Episiotomy	27 months	2nd baby born	Ireland	Married	PG Degree
Brenda	34	SVD	Labial/vaginal wall tear	26 months	2nd baby born	Ireland	Married	Not answered
Leila	45	El CS	Intact	27 months	No more pregnancies	Italy	Married	School 2nd level
Jane	35	Forceps	OASI, hymneal tear, bilateral vaginal wall tears	27 months	No more pregnancies	Ireland	Married	Diploma
Vicky	36	Forceps	Episiotomy	28 months	2nd baby born	Ireland	Married	PG Degree

Orla	41	SVD	Episiotomy	28 months	One miscarriage	England	Married	PG degree
Colette	38	Forceps	Episiotomy	29 months	2nd baby born	Ireland	Married	Diploma
Jenny	31	SVD	2nd degree	30 months	Pregnant at time of interview	Ireland	Married	UG degree
Agnieszka	35	SVD	1st degree	33 months	Pregnant at time of interview	Poland	Married	PG degree
Kate	31	El CS	Intact	35 months	2nd baby born	Ireland	Married	School 2nd level

5.2 Intimacy and sexual activity: important aspects of a couple's relationship

This first theme addresses the importance women ascribed to the intimacy and sexual activity aspect of their relationship with their partner. This theme sets the scene regarding intimacy and sexual activity in women's lives prior to pregnancy and in the postpartum period. The narratives informing this theme include how women felt about intimacy and sexual activity before becoming pregnant and at the time of interview. Sexual intercourse in the text refers to penile penetrative sex, while sexual activities is an umbrella term for sexual intercourse, oral sex, anal sex, using sex toys and masturbation, unless otherwise stated. This theme has the following two subthemes: kisses, hugs and cuddles as a form of intimacy, and sexual activity as a form of intimacy.

5.2.1 Kisses, hugs and cuddles as a form of intimacy

The majority of the women spoke of the importance of hugs, kisses, holding hands, cuddling on the couch and sleeping in the same bed as their partner. These intimate acts were seen as demonstrations of affection and closeness that separated the relationship with their partner from other relationships or friendships in their lives.

> *And still even now, while we haven't had sex we'd still be very affectionate and we'd always have cuddles and stuff before we'd go to sleep.* (Caroline)
>
> *In the evenings I would be, I would have been very happy to just snuggle into my husband and watch TV together or a movie or something like this.* (Leila)
>
> *But we would still be very, very intimate, holding hands, hugging, sitting having a cuddle in the evening. Not all over each other but you know that if you wanted to go over and sit beside him and have a bit of a cuddle you could.* (Rose)

These demonstrations of affection and acts of intimacy were a significant part of their relationship before the women became pregnant and during pregnancy and were viewed as still being important postpartum.

> *We were, we are affectionate, yeah, we would be affectionate in the house and stuff, we still are.*
> *Q In what way?*
> *A Like we would kiss and hug and we wouldn't necessarily lie on top of each other on the couch there but, yeah, yeah, we would be affectionate, yeah.* (Fiona)
>
> *Yeah, yeah, we would. Yeah we never really lost that* [showing affection] *really. Like cuddling up with each other on the couch like would be a big thing, yeah but we would have those little things. Probably kiss a little less.* (Fabienne)

One woman described how she felt that kissing, hugging and cuddling her partner was even more important now that she had become a mother and they had a baby:

> *No, I think it's* [kissing, hugging and cuddling] *actually more important, I think, I think it's more important now than ever, like, to kind of say, you know, we've got each other's backs and we, we've bigger responsibilities, and, you know, kind of working as a team and kind of looking out for each other more, so I think if anything it's more, it's stronger like, definitely, yeah.* (Colette)

> *Q Women have said sex is one thing but intimacy, being close, they see as something different.*
> *A Oh that's* [intimacy] *never missed between us, it never, never stopped, that never stopped.*
> *Q Okay. What's that like for you, how would you describe your intimacy with Leo?*
> *A We understand perfectly each other.* (Agnieszka)

Not all women indicated that they enjoyed this type of intimacy. Two women described how in their relationship kissing, hugging, snuggling on the couch was not associated with affection and closeness. Moreover, it was seen as a prelude to sexual intercourse only. These women spoke of an inability to communicate to their partner that they did not want the kiss or hug to go further so they withdrew from their partner. They did not view these acts of intimacy as something on their own that were independent of sexual intercourse. For the one woman this was a new development in her relationship with her partner. Previous to giving birth this woman considered herself to be very affectionate and responsive to hugs and kisses, but now did not welcome affection from her partner as she thought it might lead to sexual intercourse.

> *Not much no, not much and I was, I was very, I was like a teddy bear and now, but do you know why, because I have this feeling if I hug him, after 5 minutes he will ask me to* [to have sex], *or maybe we will go on from there. So I don't want to even have this* [kiss or hug]. (Joanna)

The other woman reported that affection in her relationship with her partner had always been a prelude to sexual activity:

> *But there's times, but he's always been like that. He'd be like he'd give me a cuddle but it wouldn't be like an, 'I love you' cuddle, it would be more like, 'are we going to have sex later' cuddle.* (Niamh)

A possible explanation for the described change in response to affection could be that prior to pregnancy and birth each couple had a more matched interest in sexual activity and sexual desire; therefore, kisses and hugs leading to sexual intercourse was not seen as problematic. However, since the birth of the baby their interest in sexual activity and sexual desire has considerably reduced and these two women appear to be unable to communicate this change in interest and sexual desire effectively to their partners.

5.2.2 Sexual activity as a form of intimacy

Sexual activity was viewed by some of the women as an important aspect of intimacy and for others the opposite was true. In women's description of their sexual activity there was a focus on vaginal intercourse (referred to here as sexual intercourse) over other forms of sexual activity. However, when encouraged some women identified that they engaged in oral sex and used sex toys, although sex toys were more commonly associated with sexual activity before pregnancy. Anal sex and masturbation (mutual, partner or self-masturbation) were less frequently described by women. Women may not have initially described oral sex, anal sex, sex toys and masturbation as forms of sexual activity they engaged in due to embarrassment or fear of being judged by me.

> *I'd say it depends on the relationship, like I think it is* [important], *like, I think it is, because it* [sexual desire] *is probably what makes you married in the first place, like there was the desire there.* (Vicky)
>
> *Yeah, but I just think it's just, like if you stop having sex with your partner days will become weeks, weeks will become months, do you know what I mean, and before you know it you'll be kind of lying in bed with a stranger, going what the hell, like, you know what I mean, so I just think it's really important to kind of keep it up, have date nights, go out for dinner, you know, get, get granny to babysit for a night.* (Colette)

Engaging in sexual intercourse enabled a type of closeness with their partner that women did not get/experience in any other way. It was described as an emotional closeness and connection that was only shared through sexual intercourse.

> *It would be quite regular and it was just nice, you know, it was, I always used to think it* [having sexual intercourse] *was a nice kind of way to end your day, and a nice intimate thing, and it was the only thing that really, I used to always think, you know, it's the only thing that you do with your partner that you don't really do with anybody else.* (Nyree)
>
> *Yeah I think it* [have sexual intercourse] *is* [important], *yeah. I don't even know if you realise it until you do it* [sexual intercourse] *again. Like, sometimes you can think, oh its fine, I don't really need it, like, we are grand. And then when you have sex with him you remember how much you enjoy it, and also then afterwards you do tend to be a bit closer you know, I don't mean straight away afterwards I mean even the next day or whatever. So it sort of has an effect then on you the next few days or whatever. I think it can sometimes be on your mind, even if you don't realise it, that you haven't done it in ages.* (Aoibhe)

Other women described how engaging in sexual intercourse facilitated being vulnerable with their partner. Being vulnerable was described as encompassing a number of factors, including; exposing their body, communicating through touch, completely relaxing their body and mind, trying new things (e.g. using sex toys and different positions) and verbally communicating what gave them sexual pleasure and what did not.

> *If you think about it* [your relationship], *it's not strictly about sex, it's about intimacy between two of you and kind of honesty and certain, like maybe ahead of everything vulnerability, that you are able to kind of stand there as you are and be weak, be unhappy, be this or being that, but as well like kind of share the good things and share the bad things. And I think sex is just another way to express yourself, it's just like that.* (Jane)

> *I think it* [sexual intercourse] *is an important part. I don't think it's necessarily the most, I don't know if it's the most important part, but, if it's not there I think there's something, something off. Because it's not just you know the sex, but with the sex comes the intimacy and comes the ability to be vulnerable and I think you have to be. Yeah I do think it's important.*
> *Q Sure, when you say to be vulnerable what do you mean there?*
> *A I think you have to expose yourself, you know like physically and emotionally, both, I think both. I think you do both if you have proper relations (laughing). I do think that because if you, because if you have some kind of mask on you know or if you, I know I'm not a size six, he knows I'm not a size six. And if you start hiding it's not going to make it any better now is it, I also think if you put on some kind of mask you can't give of yourself either. So both.* (Anna)

The experience of male impotence in a relationship had an impact on how one woman viewed sexual activity in a relationship. Impotence was something that she described as experiencing early in her relationship with her partner. The common stereotype identified by this woman of the male partner always being the instigator of sexual intercourse did not prevail in their relationship. This caused this woman to have some self-doubt about being attractive or still being *'fancied'*. Engaging in sexual activity continued to be an important part of being intimate for this couple and they learned to manage the problem as a team. This involved them attending couple counselling, and finding ways to understand the other person' perspective and ways to manage the issue, such as planning sexual intercourse a day or two in advance. This woman clearly identified that sexual activity was an important part of her relationship with her partner and an aspect of being intimate together.

> *Yeah I think it is* [sexual activity is important], *because I remember when we went for counselling and your man had drawn this little triangle, I can't even remember what was on it, but I remember intimacy was one of the corners of the triangle. And that's always stuck with me. That it wasn't just about me feeling like, oh god, does he not fancy me anymore, that there's more to the intimacy than that. So yeah I think it's not something that I could, like, totally just not have in a relationship at all, but it's something that I'm kind of, I suppose now I'm happy that I don't have someone that's like always wanting to have sex.* (Orla)

While most of the women mentioned sexual activity as part of the intimacy of the relationship, three women spoke about engaging in sexual intercourse as a means of keeping their partner sexually satisfied, in the hope that this would prevent them from having extramarital affairs. This was said in the context of engaging in sexual activity since the birth of the baby. This idea

that regular sexual activity would prevent the male partner from '*straying*' was particularly relevant if the woman had a close friend or family member who had experienced a martial breakdown.

> *But I do think it's* [sexual intercourse] *important, I don't think you can just, I think that's how men end up having affairs and stuff like that, I think it's quite easy to keep them happy.* (Fiona)

Some others also spoke of sexual activity as just one part of their relationship. Other aspects of the couples' relationships, including supporting each other, sharing household responsibilities inclusive of baby care, effective communication and demonstrating affection towards each other, were just as important.

> *It's* [sexual activity] *a part, but I don't think it's so important. I don't know, maybe, I don't know, it changes with age, the relevance it has. For me now the most important thing would be to have, you know, good understanding of each other, to help each other, we have a different life, a completely different life now. So it's one important part but it's not the main, you know, part, no, definitely*. (Agnieszka)

> *I think it's* [sexual activity] *as important as the two people involved deem it to be. I think that is absolutely possible to have a marriage where two people aren't actually all that fussed. And you can still have a very successful marriage. Because it all depends on what you consider marriage to be*. (Sarah)

Two women spoke about being unable to achieve orgasm during sexual activity, for these women this was always the case in their relationship with their partner. Both were accepting of the situation, it did not appear to cause them dissatisfaction with their intimate relationship with their partner. For one woman not achieving an orgasm during sexual activity caused a sense of frustration, but it was something she had accepted as a feature of her intimate relationship:

> *We have a sex life* [before pregnancy], *normal one and I was very happy, he was happy as well like. But anyway with the sex I have a problem to get an orgasm, all my life.* (Joanna)

In summary, being intimate with their partner was seen as an important part of the couple's relationship before becoming pregnant and more so for some since the birth of the baby. Intimate acts such as kissing, hugging, holding hands and cuddling were viewed positively and separated their relationship from other relationships in their lives. Sexual activity was seen as an important aspect of intimacy, in this group engaging in sexual intercourse was commonly described, it was only with questioning that some women offered information on oral sex, anal sex, use of sex toys and masturbation. Engaging in sexual activity enabled a vulnerability, an emotional connection and closeness that they did not get from other acts of intimacy.

5.3 Resuming sexual activity post birth

Resuming sexual activity after birth was a significant issue for women, and one that emerged without the need for direct questioning in most interviews. It includes the subthemes of planning to resume sexual activity and timing of resuming sexual activity. Women were more inclined to discuss resuming sexual intercourse over other forms of sexual activity, such as oral sex and masturbation, in our conversations unless specifically asked.

5.3.1 Planning to resume sexual activity

Planning when to resume sexual activity after birth was an issue that all women spoke about. Resuming sexual activity was not a spontaneous event but something that the women gave considerable thought to. A number of factors were considered by women in resuming sexual activity. These included missing the feeling of being at the centre of their partner's attention that they associated with sexual intercourse, missing the pleasure that they received from sexual intercourse and missing the emotional closeness to their partner that sexual intercourse brought. They also identified that engaging in sexual intercourse was a means of returning their relationship to the '*status quo'*; that is, before pregnancy and birth they had regular sexual intercourse and to do so again was reinstating a normal feature of their relationship.

> *It* [sexual intercourse] *felt right yeah, well I felt right physically and mentally I felt you know, I needed to, I felt I wanted a bit of attention now back on me, you know.* (May)

> *Because I would've been quite a sexual person anyway. So I was like, oh finally I'm, not me again as such. But like I can do things that I want to do now, so yea. Yea I wasn't, I didn't find, for me anyway, that it was too early* [four weeks]. (Kate)

Some women described planning to resume sexual intercourse for their partner's benefit. They identified that while they did not feel desire to have sex or an interest in sex they were aware of their partner's sexual desire and this influenced their decision to resume sexual intercourse. They did not describe feeling pressure from their partner or that their partner was verbalising an impatience to resume sexual intercourse; rather, it was an observation that women made from knowing and understanding their partner.

> *I'm trying to remember but it's, I wouldn't be able to tell with any certainty when the first time we tried to have sex again was. It was possibly around the three month mark. But it wasn't necessarily as a result of closeness, more perhaps a sense of duty on my part.* (Sarah)

> *I was happy enough, I'd say when we did get back into it* [sexual intercourse] *I was, I probably would have been as happy to wait another couple of months, it was more to*

try and keep him happy (laugh) that I kind of, we started again. And you know it was fine. But I wasn't in a big rush to have sex again after Ann was born. (Sally)

Although the women were positive about resuming sexual intercourse, they also expressed some anxiety and fear. These feelings were frequently related to their mode of birth and the potential for dyspareunia as a result of a traumatic birth. The extract below is from a woman who had a forceps birth. She anticipated dyspareunia during her first sexual intercourse and did not resume sexual intercourse until four months postpartum. The same woman, while fearful of dyspareunia, also indicated that in order to manage her apprehension she would get the first sexual intercourse over with so she could assess if there was pain and, if so, how much:

So I presume things got pulled and dragged and ripped a bit. So yeah, it took a while for things to even settle down……… Yeah, no, kind of, we, its's like, not that Hugh [partner] *was going mad about it or anything like that, but, more, look we really should do this like, there is a slight element of fear, just because it had felt so raw down there and stuff that I wanted to make sure everything was okay.* (Vicky)

Experiencing a traumatic birth, a birth injury and/or an Obstetric Anal Sphincter Injury (OASI) was frequently associated with fear of resuming sexual intercourse after birth. Women described needing time to heal physically from the injuries sustained. It was clear in these situations that resuming sexual intercourse was not an option available to them.

I had a forceps delivery… I had a weird tear… and had a big haemorrhage, and they were kind of panicked about getting him out quick… And the recovery just took a good while and I ended up having to go back in when he was 4 months to get granulated scar tissue removed. It was really, really sore. So that was, he was 4 months old so I suppose we didn't have sex after he was born till about 5 months then. I could barely do anything let alone have sex, it [the perineum] *was very, very sore.* (Caroline)

A practical consideration women described when planning to resume sexual intercourse was going away with their partner, without the baby or having someone to take care of the baby for a night or two. Many used the opportunity of being away to connect emotionally with their partner and have sexual intercourse without the distractions of the baby or household chores. Similarly if the baby was elsewhere, that is, with grandparents, the couple could focus on each other without interruption and distraction.

I can tell you exactly when it happened was March, about nine months, ten months after she was born. We went away for a night and yeah that was the first time that we had sex again…It was just, I don't know, just, it was a big thing in my head actually. I remember thinking we have to, like, going can we just stop for a minute I just want to take this slow. It was just, it was a like a big thing, not in a bad way but it was just for me it felt like it was a big thing. (Orla)

Then after the baby, I think it was nearly four months before, we weren't in the same place for a lot of the time, and I was knackered as well, and then my mother took him

for two nights, that's what it took for…[to resume sexual intercourse]…*Yeah. I think we knew maybe we were gonna, like, I probably said, "look my mam's gonna take him* [baby] *then and we'll just wait 'til then" and he was fine.* (Fiona)

Apprehension regarding resuming sexual intercourse was also recounted in how some women prepared for going away without the baby. For one woman, she did not want her weekend away with her partner to become focused on resuming sexual intercourse; therefore, she planned her first sexual intercourse post birth to happen before her weekend away.

Yea it definitely was, 'cos we had the wedding at six weeks and it [sexual intercourse] *would have happened before that. Because I was like, I don't want to go, and for it* [resuming sexual intercourse] *to be a big deal at the wedding, so yeah.* (Kate)

There is evidence that women who felt apprehensive about resuming sexual intercourse managed this by having sexual intercourse rather than delaying it or engaging in other sexual activities. These women were keen to assess: whether they would experience pain, if sexual intercourse would feel the same physically, whether sexual desire and pleasure would be experienced and if they would feel as connected emotionally to their partner as they had done previously during sexual intercourse.

I think, do you know what, the first time I was just kind of like, going, let's just get this [sexual intercourse] *over and done with and see if it still works – you know, we just wanted to see what like the situation was. And I'll be honest with you, it was sore enough like, it was probably six to eight weeks I'd say.* (Colette)

I think it might have been a bit too early [4-5 weeks] *but not much. I wasn't, I had to get over some kind of a small mental hurdle. But it was not like, oh for fuck sake what are you doing now. It wasn't like that either.*
Q You were engaged in it, were you keen to try?
A Yes, yeah, but I think maybe mentally a week extra I don't know (laugh) but yeah I was 80% there. (Anna)

A further practical consideration women identified when planning to resume sexual intercourse involved the baby sleeping in his/her own room; hearing the baby and being aware of the baby's presence was distracting for many and considered not conducive to sexual activity. Planning also included considering the time of day. For some, sexual activity during the day when the baby napped was more practical and appealing. This was because sexual activity at night time was out of the question due to feeling overwhelmingly tired, with going to bed at night viewed only as an opportunity to get sleep.

I'd say it was twelve weeks, just even, I wouldn't, I didn't want the baby in the room because I could hear him and he just wasn't really, we didn't know when his naps were or anything like that so like it would have been during the daytime rather than night because night we just needed to sleep. (Vicky)

5.3.2 Timing of resuming sexual activity

A significant issue for women in this study was the timing of when they resumed sexual activity. Women described varying timeframes ranging from three weeks to nine and twelve months postpartum, with three to four months most commonly being reported. Early resumption (three to six weeks) for some was associated with pain and was viewed as too soon. It was described as a negative experience which then led to women avoiding sexual intercourse again for several weeks. For others, it was not a physical problem they encountered; rather it was not feeling emotionally ready and the absence of the emotional connection, that was normally associated with sexual intercourse, negatively impacted on the sexual experience.

> *But in fact, like stupidly, we had sex really soon after we had Ava, like four weeks after. I don't know why, I really don't (laughing), and it was excruciating. I was like, no we have to leave that.* (Fabienne)

> *Now I didn't really like it* [sexual intercourse], *and it wasn't sore, and, and, but it wasn't painful or anything and we continued with it and all the rest but I just felt I wasn't ready* [emotionally*] then, when I look back I was like that was definitely too soon* [four weeks], *and then we waited again another few weeks, and then it was fine, we got back in to it.* (Nyree)

Contrastingly, for others, resuming sexual intercourse three to six weeks after birth was the right time for them, and was not associated with physical or emotional issues. Often times when women described resuming sexual intercourse early they did so with reference to the degree of perineal trauma they experienced and/or their mode of birth. Those who had an intact perineum or a sutured tear without any postpartum complications felt that this would be protective of their sexual health; insomuch as they tended to resume sexual intercourse earlier than women who had instrumental births, episiotomies and OASIs. A similar trend was seen with women who had a caesarean section birth, whereby these women expressed confidence that because they had not experienced a vaginal birth, or any associated perineal trauma, then their sexual health should be unaffected by pregnancy and birth. This resulted in these women being confident about resuming sexual intercourse.

> *I didn't have the vaginal delivery to, so I had no tears or I had no discomfort there.* (Sally)

> *But then four weeks after the delivery, we kind of started… I only had a bit of grazing after the labour, no nothing, no haemorrhoids or nothing. So I was like let's go.*
> *Q: Yes, it felt right for you?*
> *A: It did feel right for me at that time. To just go ahead with it.* (Leila)

Women were cognisant of the six week postpartum timeframe to resume sexual intercourse that is regularly recommended by health professionals. Some choose to aim to resume sexual intercourse around this time, while others felt that six weeks was too long as evidenced in some of the extracts from women who resumed sexual intercourse between three and six weeks postpartum. Nonetheless, many women felt that six weeks was too soon after birth for them. For a small number of women the frequently reiterated timeframe of six weeks placed an undue pressure on themselves to be '*back to normal*' in all aspects of their lives including, their sexual lives.

> *People* [female friends, media, magazines] *say six weeks* [to resuming sexual intercourse] *I wouldn't have been able then, I was very sore, I was still bleeding at five weeks. So no, I was definitely happier around that twelve weeks to go yeah go ahead and try it out* [sexual intercourse]. *Just test the waters and see what would happen.* (Jenny)
>
> *I think after six weeks, I was like holding onto that sort of six weeks, don't come near me for six weeks. I think it* [sexual intercourse] *was the last thing on my mind really before the six weeks passed to be honest.*
> *Q: Where did the six weeks come from?*
> *A: Because you know the way you have your six week check-up and because I had a C-section I don't even think that that applies but in my head you should be sort of back to yourself after six weeks. I'm sure I'm not the only one who thinks like that. Because you've the six week check with the doctor.* (Aoibhe)

In summary, this theme of resuming sexual activity, which includes the subthemes of planning to resume sexual activity and timing of resuming sexual activity, illustrates that the decision to resume sexual activity is complex. Resumption for some women was influenced by a desire to return to the emotional closeness and sexual pleasure that they experienced during sexual intercourse. For women in this study they resumed sexual intercourse because they were aware of their partner's sexual desire and they wanted their partner to be sexually satisfied. Many expressed apprehension about resuming sexual intercourse; fear of pain after a traumatic birth and uncertainty regarding how it would feel physically (sexual desire and pleasure) and emotionally (emotional closeness). Mode of birth, degree of perineal trauma and the recommended six week postpartum timeframe were all considerations that women took into account when they considered the timing of resuming sexual intercourse.

5.4. Ongoing challenges to intimacy and sexual activity

This theme addresses the ongoing physical and psychological challenges to intimacy and sexual activity that women recounted. Included in the physical challenges are the sub-themes of

dyspareunia, breast changes and extreme tiredness. Psychological challenges include emotional unavailability, changed perception of body image and feelings of guilt.

5.4.1 Physical challenges to intimacy and sexual activity

Numerous physical challenges to intimacy and sexual activity as a consequence of pregnancy and birth were described by women. The challenges described were not present before pregnancy and women, for the most part, developed strategies to overcome them (see Section 5.5.1).

5.4.1.1 Dyspareunia

Many women described new onset dyspareunia since birth. For some women this was short lasting, that is, two to three months, but for others it persisted to twelve months postpartum, and even beyond with a few women continuing to experience some degree of pain during sexual intercourse up to time of interview. Dyspareunia was described by some as '*excruciating*', '*horrendous*' and '*desperate'*. For those who experienced severe dyspareunia, sexual intercourse was not associated with sexual pleasure or sexual satisfaction. For this group of women the pain was so bad that they wondered if they would never have pain free sexual intercourse again. In spite of this, however, even where women described severe pain, women continued to demonstrate an interest and engaged in sexual intercourse.

> *Very painful, very, very painful. I had quite a bad second degree tear and that took a very long time to heal up…And then having sex seemed to just irritate it hugely, like it was painful. There was a time when I thought I would never be able to have sex without it hurting.* (Sarah)
>
> *And I could feel the scar tissue like the whole time, and the thing was, like, it was just…you know, it* [sexual intercourse*] was one of the things you wanted to do but then like you knew it was going to be like horrifically painful. And it was… And when the tag* [skin tag] *tore… that was excruciating but after that it was better. Because* that [skin tag] *made things very tight, much tighter than they had been. And that was very uncomfortable, like you know on entry as such. And then it would just be irritated then after.* (Fabienne)

When probed about resolved dyspareunia and whether they had pain-free sexual intercourse at the time of interview, many used the term '*discomfort*' or '*uncomfortable*' to describe how sexual intercourse felt. This suggests that sexual intercourse was not pain-free, but that it was something they could cope with as it was better than the pain they had experienced when sexual intercourse was first resumed.

> *So unless that, something has moved or depending on what way but it* [sexual intercourse] *would be more uncomfortable sometimes.* (Niamh)

All of the breastfeeding mothers described experiencing vaginal dryness during sexual intercourse. Experiencing vaginal dryness impacted on the spontaneity of sexual intercourse for some women. The normal vaginal secretions that women produced during their arousal response to sexual desire were not present, this meant women had to plan in advance and have lubricant to hand, or stop to fetch the lubricant from its storage place.

> *You can't just go for a quickie, I used to be able to do that, I can't anymore. Maybe it's that, maybe if I stopped breastfeeding, maybe it's the dryness.* (Fiona)

One woman described experiencing vaginal dryness as a *'limitation'* of her body that was not present before pregnancy and birth. She was frustrated by her body's inability to respond to sexual desire as it had done in the past. This was a new aspect to her sexual life that she did not welcome.

A different sensation during sexual intercourse was described by some women. This included a tightness of the vagina that was associated with discomfort.

> *Everything still feels really tight and pinchy and very sore.* (Jenny)

> *But I suppose because I had a lot of stitches things were a bit tight at the start. So a little bit uncomfortable more so than pain.* (Caroline)

In contrast, a feeling of vaginal looseness was more commonly reported by women. This resulted in a lack of sensation for women, whereby they did not feel their partner's penis in their vagina in the same way as they did before having their baby.

> *Looser and just not the same shape. Just a different shape and kind of, yeah it was kind of, I don't know, like just muscle wasn't the same.* (Jane)

The resulting lack of sensation that women described appeared to be something that they accepted as their new normal. It was not associated with distress or anxiety but more a resignation that this is the consequence of childbirth. One woman did associate the change in vaginal tone as negatively affecting her perception of her body image (Section 5.4.2.2). Women did not report that it affected their own sexual satisfaction but they were clearly concerned with it affecting their partner's sexual satisfaction. Women questioned their partner to determine if the change in vaginal tone impacted on their sensation and sexual pleasure during sexual intercourse.

> *So I was sort of asking him, I was like so does it feel really different like, is it really loose or whatever, he was saying it kind of feels the same as it did before like, you know, he was like, it's not hugely different, so he was happy.* (Colette)

It was notable that women did not explore physiotherapy or pelvic floor exercise as a means of helping improve vaginal tone. Pelvic floor exercises were seen as a preventative measure or treatment for urinary incontinence rather than for sexual health issues.

> *I remember sneezing outside Boots in Naas and a big gush, like, and I was like, Oh My God – so that's the most standout memory I have of having a little accident like that…I tell you I did them* [pelvic floor exercises] *then after that like.* (Nyree)

5.4.1.2 Breast changes

There was a view expressed by breastfeeding women that their breasts had taken on a new function, whereby they were now viewed as a source of nutrition for their baby, rather than a part of their body associated with sexual arousal. They were challenged to consider a dual role for their breasts and tended to view their breasts in their functional role only. This was further exacerbated by the potential for breasts to leak milk if touched during sexual activity.

> *I would have felt a lot more positive about it* [having sexual intercourse]. *So I would have, felt much more ready to, much happier to have sex, as well because I was only giving one feed, like my boobs were not, you know growing and shrinking and you know the milk wasn't spurting out of them and that kind of thing.* (Sally)

Some women expressed a powerful sense of disconnection from their breasts. They spoke of feeling their breasts were no longer their own, that they belonged to the baby exclusively. This view that their breasts did not belong to them furthered the view that their breasts were not related to being intimate with their partner anymore.

> *And it was like yeah they* (breasts) *became the baby part almost I suppose. I don't know if we* [her and partner] *discussed it or it was just we both knew.* (Orla)
>
> *Yeah baby is there* [at the breast] *one minute and then, the next,* [the partner is touching the breast] *get away from me (laughing).* (Jenny)

5.4.1.3 Extreme tiredness

Extreme tiredness emerged as a significant issue for women and it undoubtedly had a negative impact on their intimate relationship with their partner. Women wanted to be close to their partner, but the tiredness they experienced left them weary and exhausted. They recounted begin emotionally drained and unable to respond to intimate gestures or initiate intimacy with their partner.

> *But I don't think, I think if, you know, not that it's* [the relationship] *changed, it's we're tired more so, you know. We don't want it* [the relationship] *to change but we just,*

we're tired, before he comes home from work I'm in bed, he wants to go straight to bed and that's just how it is you know. (May)

Yeah, no, definitely, and I was wrecked tired working fulltime and I think when I came home by eight o'clock I pretty much was nearly falling asleep on the couch like, that kind of way, by eight it was, I'd had it like. (Vicky)

Being extremely tired had a direct impact on women's interest in sexual activity and their experience of sexual desire. In the first instance it interfered with their interest in sexual activity.

That's the last thing I want to do [have sexual intercourse*]. I'm like I want to have a shower, I want to just lie down…And I'm just like, oh just after a twelve hour shift, or I'm working so long, or you know, I know you* [partner] *have energy* [for sexual intercourse], *because, whatever, but I don't.* (Jenny)

Obviously there's the odd time where I really am absolutely wrecked tired and I'm just like I'm reading my book and I'm going to sleep, you know, don't even come near me. (Nyree)

Some women expressed an interest in engaging in sexual activity but the tiredness they experienced interfered with their ability to feel sexual desire and arousal. They were challenged to get to a place physically and emotionally where they were connected to their partner and to experience sexual desire.

He would like to have sex more times, while I'm like (sigh) "I'm tired today". But I really am tired, I'm not just making up an excuse. But it's very difficult for me sometimes to just switch off, to wind down, you know and just to relax enough to enjoy it [sexual intercourse]. (Orla)

Others described being interested in sexual activity, engaging in sexual intercourse with their partner, attempting to ignore the tiredness that they felt, but not being able to do so. Thoughts of sleep distracted them resulting in an emotional detachment and a sense of urgency and rushing sexual activity so they could sleep.

I kept falling asleep in his arms and he was like, what's going on here? And it was as well frustrating because my body didn't respond and like I was actually so tired constantly that it was like not even briefest interest in sex. For like, a good few months. (Jane)

Tiredness was often described alongside being busy; being busy referred to women's day being full with activities relating to baby care, household chores, grocery shopping, food preparation and laundry. Being busy coupled with tiredness from frequently interrupted night time sleep was a source of friction for some couples, with arguments over household chores, who was '*more tired'* and feeling less patient towards each other, ensuing.

> *It's just I'm snapping at him because I'm tired, you know what I mean, because it could be like three o'clock in the morning and baby is crying, oh can you not just give him the boob, and like, piss off, like, you know what I mean, it's all, that's all exhaustion, you know, and you're kind of like "sorry for snapping at you last night", you know.* (Colette)

It was difficult for women to find time to be alone with their partner. Oftentimes one of them worked during the day and, with the evening occupied with feeding the baby and/or trying to introduce a sleep routine, by nine o'clock at night after their own meal they were both tired and wanted to sleep. The need and desire for sleep overrode an interest in being intimate.

> *Yeah, I think mainly, the whole, I think for me, the whole intimate relationship is different… I think for me it's a time thing, because of lack of time and lack of daily intimate contact more than anything else, I think, because I do feel different when we just spend the day together. We could be doing you know grocery shopping, I don't know.* (Anna)

> *Ah no, like to be honest I do definitely think it's* [the lack of kissing, cuddling, hugging] *down to, it's down to the amount of time that's in, the amount of hours that are in the day like, you know, because it's just not possible when you can't, when you're, when you're not here like.* (Brenda)

Several women described how being tired and busy left them distracted during sexual intercourse. Women spoke about being interested in sexual intercourse and experiencing some level of sexual desire. However, their mind wandered to chores that had to be done and their 'to-do lists' rather than remaining connected to the intimacy of sexual intercourse.

> *Sometimes I am, but sometimes now – this sounds awful – but sometimes I find it hard to put my head there* [interested in sexual activity] *now and thinking about a load of different things now, I find it hard to switch off from what happened during the day or what's happening the next day. Sometimes yeah, I am, if I'm really, really in the mood for it, yeah, it'll be all I'm thinking about at that moment. But that doesn't happen as much now for me, that I'm really, really in the mood for it, as it used to, to be honest, like I mean I still enjoy it and all that but – no, I would definitely not be, as often, I wouldn't be as connected, I don't think, as I used to be.* (Nyree)

For many, caring for their baby, being tired and attending to household chores left them feeling both physically exhausted and emotionally drained. These challenges meant that in the first instance they did not have interest in sexual activity, and in the second, they were distracted by wanting to sleep and by all the baby and household related chores that required attention. This had a direct impact on their ability '*to get in the mood*' and feel sexual desire.

> *When my husband wanted some cuddles and something* [sexual activity] *I was like, "ah I'm tired" (laughing)… I didn't want to because I just didn't feel like it. I think more couples have this as well. Because when I was talking to my friends…. And very often they would tell me "yeah, whenever we find a quick moment my husband says it's either now or next week" (laughing). So you know, but I'm not like this, I need a bit of time to slow down and switch off to enjoy it. If it's a stressful day or if I'm tired or I can't switch off, I know it's just like I can't enjoy it.* (Leila)

> *You know when you are there* [having sexual intercourse] *and you are going, whatever about the worrying about the wobbly bits but your mind is thinking; is the baby going to wake up at half past five and if she does, does that mean her nap is going to get pushed back a bit, you know. Very difficult.* (Sarah)

5.4.2 Psychological challenges to intimacy and sexual activity

This subtheme emerged early in the data analysis process during coding; it includes the sub-themes of emotional unavailability, changed perception of body image and feelings of guilt.

5.4.2.1 Emotional unavailability

Many women expressed being emotionally unavailable to their partner. This was particularly prevalent with women who were breastfeeding but was also described by those who were not breastfeeding. Being emotionally unavailable was often associated with tiredness and busyness but there were also additional factors at play. Women identified how the regular and intense close physical contact they had with their baby left them not wanting to be touched by their partner as they felt '*all touched out'* from the close physical contact with the baby.

> *I think as well, I was breastfeeding as well and I am now still breastfeeding. You know that sort of 'all touched out' you know, there's the baby on me, just like no, I'd like a bit of personal space.* (Caroline)

In addition, women spent the whole day with the baby, where they showered love, kisses and cuddles on the baby. They worried about the baby's well-being; were they getting enough to drink, were they sleeping enough, were they having enough wet and dirty nappies, when should they introduce solids. All of this love and concern for the baby's wellbeing meant that for many women they were emotionally exhausted. Not wanting to be touched by their partner and being emotionally unavailable meant that women were not engaging in the non-sexual aspects of intimacy, such as kissing, hugging, cuddling and sitting or sleeping close to one another. These aspects of intimacy were identified as being important in a couple's relationship and their absence was significant, insomuch as a big part of intimacy with their partner was absent. There was a distinct awareness amongst women that it was difficult to find the balance between being devoted to the baby and being emotionally available to their partner.

> *Yeah there was definitely a feeling of just the tiredness, the exhaustion, being touched out, just being so, I had to be so emotionally available to her. I had no room left in my*

head to be emotionally available to him, so yes, that definitely did happen. And it never, it didn't just come and then go, it came and it's gradually declined. (Aoibhe)

You know from a whole emotional relationship perspective like, you know it is hard because you are kind of, it's just managing the two. Because I know it's important that you know after you have a baby you are so self-consumed like, just with them and their needs and yourself, you leave your partner aside as such. I was very cognisant of that. (Fabienne)

Related to being emotionally unavailable is the idea that while women did engage in sexual intercourse they were not totally connected with it, with intercourse described as sometimes '*going through the motions'. 'Going through the motions'* was about demonstrating an interest in sexual activity, but physically not feeling the desire and arousal that they would normally experience.

Well it wouldn't be basically me starting it, it would be him starting and I would be kind of nearly saying no, because, then I'm like, oh actually we haven't done it in ages now so we might as well, but usually I'm not relaxed or into it. (Leila)

5.4.2.2 Changed perception of body image

'*Stretched', 'baggy', 'belly', 'sagging', 'leaking', 'stretch marks'* and *'scars'* are some of the terms that women used to describe their abdomen and breasts post birth. The period during the first few months after birth was depicted as a time of self-consciousness and discontentment with body shape.

It's a personal thing, I don't feel attractive or you know, I just feel like, I think of my boobs I think of milk, there's milk there and it's gross. Then I just think of you know like scars and I can feel like parts of the scar and like you know that's all I can think of. Just ruins everything… you know you just feel, not saying you feel horrible but it's nearly like, I don't feel a bit attractive, or like, want to have sex or engage with anyone. You know, with him like over anything. I'm just like yuck! So that was a big thing, and it's taken me a long time to not look in the mirror and be like yuh. And that's, it's just the ravages of having had a baby, but also just that side of things for me you know I don't look at myself and go oh you are fat, it's just like, you know, I've got scars everywhere now. Big section scars. (Fabienne)

And to a certain extent as well I'm not saying body shame, but yeah, you can call it that, but, it's just like, insecurity about the changes that happened to my body which is not as comfortable anymore. (Jane)

One woman described being unsatisfied with her postpartum body. However, it was not just her own perception that she was concerned with; rather, she also perceived that her partner was uncomfortable with the changes that had taken place in her body. This influenced how regularly this couple engaged in sexual activity, with sexual activity described as being

infrequent, with six to eight weeks passing after their first sexual intercourse before any subsequent sexual activity took place again.

> *Your body just doesn't look like the body you had beforehand. You know you wouldn't necessarily be proud of it, especially those immediate days or immediate months even… But more that, and even, so after the birth when I would still have had, you know a belly and leaky boobs and not feeling, you know like in any way attractive and I don't think Shane knew where to put his hands on me either, even just cuddling… He didn't really like feeling my belly and didn't want to go anywhere near the boobs so he might put his hand on my thigh or something… So he would have still attempted physical contact but yeah it was just like, this is not the body that you had beforehand.* (Sally)

For the most part women in this study continued to express an interest in sexual activity with their partner irrespective of how they perceived their body image. Women developed strategies to overcome their lack of satisfaction with their body image (see Section 5.5.2.2) and continued to enjoy the sexual part of their relationship with their partner.

> *I think you're so body conscious maybe. Well I know I'm really body conscious. So it was like lights off, under the covers don't look at me kind of thing. But I was still happy to crack on with it like.* (Kate)

Nevertheless, not all women were able to develop a strategy; for some their negative perception of their body image had a detrimental effect on their sexual relationship with their partner, how they talked about sex with their partner and the sexual activities they engaged in.

> *But I'm not comfortable with him sometimes seeing me and even if we are just having a kiss and a cuddle, and he'll say something like, "oh like, have you had any dreams* [sex dreams] *or whatever", you know something like that, whereas we wouldn't have thought twice about it* [talking about sex dreams] *before. And I'd say oh I'm too embarrassed to talk about it. And I shouldn't be…..I shouldn't be with him, like I shouldn't be embarrassed around my husband or my partner like. He's the one, he would be the one person I could tell anything to.* (Rose)

5.4.2.3 Feeling of guilt

A multifaceted feeling of guilt was described by women in relation to how their intimate relationship had changed since the birth of the baby. Women felt guilty because they were not as emotionally available to their partner as they would have been before the birth of the baby (Section 5.4.2.1). The fact that they were rarely alone together to talk and were experiencing reduced kissing, cuddling and other forms intimacy was viewed with sadness and guilt.

> *No, because we just don't have the time* [to talk to each other], *that is really what it comes down to… it's just very different, it's very, it's a different relationship nearly, yeah, yeah, which, yeah, you would miss, you would definitely miss it* [being intimate; kissing, hugging etc.] *because you don't have it, you don't have that sort of connection*

> *I suppose, as often as you used to have, it's still there but it's just not, I don't know, it's not at the forefront of things.* (Brenda)

Women also described feeling guilty about being unable to maintain the sexual aspect of the relationship as they had done before becoming pregnant and giving birth. This included their altered interest in sexual activity and altered sexual desire. There were complex and conflicting thoughts and feelings at play when exploring the subtheme of guilt, for example, some women described a rational interest in engaging in sexual activity with their partner. Yet, as a result of tiredness, busyness and being emotionally unavailable they did not experience sexual desire and arousal. Women also talked about feeling that they '*should*' be engaging in sexual intercourse and associated feelings of guilt that they frequently refused their partner when he made efforts to initiate sexual activity.

> *I want just nice sex with my husband. But I am not ready to have, like I want to but it's not coming in my head, in my body like I am just doing it because he wants. I can't tell him no, no all the time.* (Joanna)

> *It's both of us think that we should* [engage in sexual intercourse], *its him as well, like he'd say it to me as well, it's not him, it's not me, it's the both of us in it, and the both of us feel like we should but as I said it's, we don't get much time to do it and we don't get much time to even see each other.* (May)

Feelings of guilt emerged when tiredness or worry over the baby's wellbeing or distractions with baby care and household chores prevented them from thinking about sexual activity in a positive way and they avoided engaging in sexual activity their partner.

> *I find an excuse somewhere. And I feel awful admitting it but I will find an excuse somewhere. And it's not the me he first met, I think there's a guilt about that as well it's like yes we have this wonderful family and that is absolutely amazing but am I taking something else* [sexual activity] *away from him… and I know I keep saying about feeling guilty but I do feel terribly guilty, that one day I'll push him too far and it will hurt him* [his feelings]. *Not that he'd leave but that I'd hurt him* [his feelings]. (Rose)

Additionally, women described feeling guilty about how they perceived their partner might feel, insomuch as they did not want their partner to feel unloved and undesired by the changed pattern in sexual activity since pregnancy and birth.

> *Well this is it, I'm hearing him and I'm like all right grand we'll do that* [have sexual intercourse] *because he feels better. It's like he feels he has me again you know that way. And then I don't feel so bad.* (Niamh)

> *Yeah, yeah, but I think it is a problem, like I feel that, now like you're just like ships in the night sometimes and then you feel like, oh I better just do this now* [sexual intercourse] *so I don't end up divorced (laughs).* (Fiona)

A number of women identified a longing, communicated with apparent sadness and regret, for the sexual part of their relationship to return to normal or pre-pregnancy normal. This was interpreted in many cases as being weary or feeling guilty over the change to the intimate and sexual relationship and wanting to return to feeling and enjoying sexual desire, sexual pleasure and sexual satisfaction with their partner.

> *I would like to be just at that point where I was back to normal, I hate this kind of feeling like it's* [sexual intercourse] *a job.* (Fiona)

> *But yeah, I'm kind of hoping now we can kind of go back to even just regularly having it* [sexual intercourse] *and getting more into a routine and getting just to enjoy it more and be more relaxed rather than just we should have sex.* (Vicky)

In summary, the theme of ongoing challenges to intimacy and sexual activity has two subthemes: physical and psychological challenges. Women recounted how dyspareunia negatively impacted on their feeling of sexual satisfaction. Some women felt that the dual role of their breasts as a nutritional source for their baby and a part of their body associated with sexual arousal and foreplay was incompatible. Extreme tiredness and being busy meant that many women did not have interest in sexual activity and those that did often experienced a lack of sexual desire and arousal that was different to their pre-pregnancy response to being interested in sexual activity. In this group of women, some talked about being emotionally unavailable to their partner as a result of devoting all their love, affection and concern on the baby. Some women described being unhappy with their changed body, the scars, their abdomen, their weight and their breasts. For some, this interfered with their interest in sexual activity and for some the opposite was true, even though they were not very happy with their body it did not interfere with their interest in sexual activity. Feelings of guilt were described by women in relation to their changed interest in sexual activity and sexual desire. They worried their partner would interpret their changed interest and sexual desire as a rejection of them.

5.5 Endeavours to overcome challenges to intimacy and sexual activity

For the most part, women developed strategies to overcome both the physical and psychological challenges to intimacy and sexual activity that had developed since the birth of their baby. The narrative in the subtheme strategies to overcome challenges to intimacy and sexual activity are presented under the following subthemes: strategies to overcome dyspareunia, strategies to overcome breast changes and strategies to overcome tiredness and busyness. The subtheme endeavours to overcome psychological challenges to intimacy and

sexual health, includes the additional subthemes of strategies to remain emotionally available, strategies to manage perception of body image and strategies to manage guilt associated with changed interest in sex and sexual desire. While this theme is not a response to the ongoing challenges women experienced with intimacy and sexual activity, many of the strategies developed were directly or indirectly related to those challenges experienced.

5.5.1 Strategies to overcome some of the physical challenges to intimacy and sexual activity

Practical solutions to some of the physical challenges encountered by women to intimacy and sexual activity were described by this group of women, alongside more complex solutions.

5.5.1.1 Strategies to overcome dyspareunia

The physical pain that some women felt during sexual intercourse was improved by using different positions and being less vigorous during sexual intercourse. This strategy did not always resolve the pain completely but it did demonstrate that the women were able to communicate effectively how sexual intercourse felt to their partner. It further illustrated that the couple were approaching the problem of the woman experiencing pain as a shared problem and were trying to find a solution together.

> *It's not bad, it all depends, like not bad, but, it all depends what position you are going to take, because some of the positons are still, like, painful, and, like, I don't want to, but some of them are ok.* (Joanna)
>
> *It* [sexual intercourse] *wouldn't have been the same as before because we were taking it easy, just in case.* (Brenda)

Many tried several approaches together, such as changing positions to determine which was more comfortable, taking more time to get sexually aroused, being gentler during penetration and also repeatedly trying sexual intercourse. Women described experiencing less pain with an increasing number of times they had sexual intercourse.

> *I wouldn't say, well probably the first once or twice. But I suppose because I had a lot of stitches things were a bit tight at the start. So a little bit uncomfortable more so than pain… I think it was fine after a while.* (Caroline)
>
> *No, sometimes it's* [the pain] *still there, but it's getting better.* (Agnieszka)

One woman described practising perineal massage in order to stretch out her pelvic floor muscles. She felt her dyspareunia was a result of vaginal tightness resulting from the sutures she received for a 2nd degree tear. This couple viewed her dyspareunia as a shared problem

and they developed a strategy together to try and manage the problem with the woman's partner performing the perineal massage for her.

> *So probably at three months me and Sam were trying to figure it out like, I was like, awful sore* [during sexual intercourse]*. And I said to him, "would you", I said to him "you just have to stretch it out for me".* (Jenny)

The sensation of vaginal looseness, that is, poor tone of the vaginal wall was also managed with position changes in some instances. This provides further evidence of good communication with couples, talking about how sexual intercourse felt while attempting different positions.

> *And it's* [sexual intercourse] *not the same, and, I had this feeling that it's not the same. Like when I am on the back and he is on me, I kind of feel nothing, I have to put my legs up.* (Joanna)

In contrast, one woman perceived her partner was unhappy with the lack of tone of her vaginal wall. She came to this conclusion not through dialogue but by his new interest and request for anal sex. This could suggest an inability to effectively communicate each ones sexual preferences and their sexual satisfaction. Furthermore, it negatively impacted on her own view of her vagina and how birth had impacted on her physically.

> *No but I did notice since I've had Ann he's way more like talking about anal sex, like, that's a total topic now that never came up on the table before. So that I'm like, where is this coming from? And then I was conscious about myself and I was like, oh maybe it's too loose now or maybe because I had Ann maybe that's why, it's tighter that way or something.* (Niamh)

For many the pain associated with reduced vaginal lubrication during sexual intercourse was resolved by using a water based lubricant. Nonetheless, one woman identified that her preferred means of becoming lubricated was her physiological response to sexual desire and sexual arousal.

> *It was a bit uncomfortable to start with and we definitely had to get some lub and that made a big difference. And we were kind of fine after that.* (Sally)

> *Yeah, I had to use lubricant a lot, like, you know, yeah, up until before he went* [overseas with work]*, like you know, but yeah I think that as well, you know when there's a bit of desire there as well, you know, you get your own, get everything going as well you know.* (Fabienne)

Just one woman identified oral sex as a means of enjoying sexual activity and experiencing sexual satisfaction. This woman was experiencing dyspareunia and rather than refrain from all sexual activity she engaged in oral sex.

> *I think you can still be intimate without sex and we've been intimate without having sex a few times as well because I amn't enjoying it at the moment so we do other things.* (Fiona)

5.5.1.2 Strategies to overcome breast changes

The changed view of the breasts that women described was something they were unprepared for but managed by effective communication with their partner. Those who no longer saw their breasts as part of their body that induced sexual desire and arousal indicated that caressing breasts was no longer part of their sexual activity repertoire or foreplay. Their solution was to ask their partner to avoid touching the breasts. The same solution was used by women who expressed a fear that they would leak milk if their breasts were touched during sexual activity.

> *But even if we were being intimate or anything I'd be like this was an area* [the chest] *you don't go near, because I was afraid that milk was going to squirt out.* (Orla)

Not every woman felt able to have a conversation about their feelings towards their breasts. For one woman there was an implicit understanding between her and her partner that the breasts were off limits during foreplay and sexual activity. Another woman was so uncomfortable with the idea that milk could leak from her breasts during sexual activity that she was unable to discuss it with her partner. For her, she did not want him to consider her breasts and her body through the lens of feeding, milk and the baby during sexual activity. Neither of these two women expressed a difficulty in talking to their partner about other aspects of their sexual relationship. It appears that they were unprepared for the possibility that their view of their breasts would change so dramatically and that their breasts might leak during sexual activity.

> *But like I'm not saying to him like when he goes near my boobs all I'm thinking about is milk coming out of them. I don't want to say that to him because I don't want him to think that. You know it's just bad enough one of us is thinking that.* (Fabienne)

5.5.1.3 Strategies to overcome tiredness and being busy

Tiredness and being busy were often described together, and their negative impact on intimacy and sexual activity was universally experienced by this group of women. Nonetheless, women wanted to be intimate with their partner and enjoy sexual activity. They therefore developed strategies to overcome tiredness and being busy. Strategic planning for sexual activity with their partner now featured. The enjoyment of spontaneous sexual activity was removed from most intimate relationships and was missed by many of the women in this study. Elements of planning included avoiding sexual intercourse during the week because both they and their partner were tired. Others planned sexual intercourse for day time, that is, during babies' nap times because night time was associated with their own sleep. Other

women talked about a window of opportunity for sexual intercourse on a Friday or Saturday night after the baby had gone to sleep.

> *But yeah, I definitely think that when you have kids it's* [sexual intercourse] s*omething you really actually, we didn't go naturally back to having it* [sexual intercourse] *as often, we have to think about it more, it is planned, it's definitely, everything is planned.* (Fiona)

> *Yeah, yeah, it's something like this, yeah, yeah, as soon as they go to bed, maybe a Friday or a Saturday, usually not a Sunday because on Monday we work, we say okay, we are free, so….* (Agnieszka)

Persistent challenges for opportunities to engage in sexual activity with their partner were: tiredness (either partner), stress related to work (either partner), household chores and being distracted by baby related issues that required attention. Conversely, one woman did not plan sexual activity with her partner, for her that would take too much of the pleasure of intimacy away from it.

> *We're not planners. No, I would find that. It wouldn't be my cup of tea to be like, right we'll pencil that in at eight o'clock like. That nearly takes the niceness out of it like, you know.* (Kate)

Feeling tired, being busy and distracted by the baby and household issues were occasionally managed by going away without the baby. This afforded the couple time to connect with each other, it gave them time to build up to sexual activity, and the distractions associated with home life were not as problematic.

> *And we went down and we went to Sligo early and just looked around and stuff. And then went for dinner, now, when went to the hotel, went for a Jacuzzi and all that sort of stuff. And then had sex and then went for dinner and then came back. And went to sleep and got up and had sex and went for breakfast.* (Kate)

Going away was not an option for all couples. In some cases family members, usually the woman's mother or her partners' mother took the baby for a night or minded the baby for the evening. These occasions afforded women the opportunity to put issues relating to baby care and the household to one side and connect with their partner. It enabled uninterrupted conversation, perhaps sharing a bottle of wine or some beers and feeling relaxed. All of these actions helped women feel more interested in sexual activity. It also meant that being relaxed, not being distracted and enjoying their partner's uninterrupted company enabled women to feel sexual desire and sexual arousal.

One woman described that their solution to being busy was to engage in oral sex. She described it as a quick and accessible solution to engaging in sexual activity that resulted in sexual satisfaction.

> *I think, I think oral sex especially, because sometimes you just don't want to get out of all your clothes, sometimes it's just easier like, you know that kind of way, and it's nice and you can go to bed with a big smile on your face and you're like, ah, you know, so yeah, it doesn't have to be penetrative sex, do you know what I mean.* (Colette)

5.5.2 Strategies to overcome psychological challenges to intimacy and sexual activity

5.5.2.1 Strategies to remain emotionally available to their partner

Some of the strategies identified in this subtheme are closely related to the strategies to overcome tiredness and busyness, such as going away together and having someone take or mind the baby. These types of strategies afforded women alone time with their partner where they could connect through communication, relaxing in each other's company and building up to sexual activity in a gentle and slow way. Women also described more subtle ways to be emotionally available to their partner, such as being physically close, for example, purposively sitting beside them on the couch. This, in turn, facilitated snuggling close, arm rubs, shoulder rubs and other acts of intimacy. They made time to watch a television series together, they didn't '*cheat'* and skip ahead, this was seen as sharing a relaxing activity as a couple at the end of a busy day.

> *We'd always sit together on the couch like, and then when Sally came along and I was feeding her, I was sitting in a different chair because it was more comfortable. But then that was, that was a big thing, then, I remember at some point feeling like, we don't sit on that couch together anymore. So now we always do sit on the couch together again.* (Orla)

> *If we get the evening then we can watch a movie together or a film together we just, I like to sit close to him and you know. I like to get some massage or something like this from him, or just hair brushing, I love hair brushing.* (Leila)

Women were very cognisant of the impact of the physical distance that sleeping in separate beds had on their relationship. Often, after a day filled with baby care and household chores sleeping in the same bed was the only close physical contact (other than a good morning kiss) they had with their partner. Sleeping together facilitated a goodnight kiss, a hug, snuggling together and sexual activity.

> *And I said to Michael, "ah we can't keep doing this", because even the sleeping together in the same bed, I think is nearly as important as anything else because you are getting a little cuddle before you go asleep…like you feel very separate when you*

are in different rooms. And then, I said "right it's just going to be more damaging to us if we sleep in separate rooms for the next four months than its going to be to have him [the baby] *in a room on his own". So he's in on his own.* (Aoibhe)

The most effective strategy used to remain emotionally available to their partner was good communication. Being able to talk to their partner about their tiredness, their body image, their dyspareunia, their lack of vaginal lubrication, their lack of interest in sexual activity and the associated guilt seemed to enable couples to work as a team and remain connected to each other. Being able to express their worry about the baby, being overwhelmed adapting to motherhood[16] and the isolation[17] and loneliness they felt was essential to being emotionally available to their partner. It appeared that those who had open and honest conversations with their partner about their feelings and were able to listen to their partner demonstrated less stress and anxiety regarding changes to their sexual life since the birth of their baby. Working as a team to resolve sexual health issues, viewing issues as 'our' problem rather than 'her' problem was seen as very significant to women.

Yeah, and as I said, it wouldn't be that I'd feel insecure or he'd feel insecure, we've talked about, kind of, we do talk about our sexual relationship and sometimes I'm not happy and sometimes he's not happy and we'd sit down and we'd say it. (May)

And we were talking about, that he is not happy with, like, he has to ask me all the time, kind of begging and he doesn't want this as well. He told me he doesn't want to go anywhere, like because he can obviously like get it from different girls or pay for it or whatever, we talk about that. He said he doesn't want to, he just wants to with me. (Joanna)

Effective communication did not simply involve talk and conversation. Some couples were confident in their intimate relationship without having a conversation about it. Body language, knowing their partner very well and being able to judge each other's mood was key to communication about intimacy and sexual activity. In the extract below one woman describes

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[16] All women spoke at length about their struggle to adapt to motherhood. While these narratives were coded, they represent experiences and views of transitioning to motherhood; a concept that is not the focus of this study. Thus, in order to achieve the aim and objectives of focusing on sexual health issues postpartum, these findings are not included in this PhD thesis, while simultaneously acknowledging that adapting to motherhood is very important to women.

[17] Many women experienced terrible isolation and loneliness during their maternity leave. These narratives were coded but these findings do not address the aim and objectives of this study and are therefore not presented here.

'just knowing' in relation to sexual activity with her partner. In other aspects of their relationship, this woman described good verbal communication with her partner.

> *Well it's not like we sit down – like we're both, I know he's very happy with it* [our sexual activity]*, he always says it – we don't really talk about it as such, you know, no, we don't really discuss it like. We just both know, we both kind of understand I suppose, how we, what we both like and, and how frequently we like it. Like we, we know each other pretty well now, we know the nights to not bother going there and the nights to kind of, you know, as much as you can know I suppose, yeah.* (Nyree)

Not all women described good communication with their partner in relation to intimacy and sexual activity. One woman described not wanting her partner to feel bad because she does not achieve an orgasm during sexual intercourse. Not achieving an orgasm was not a new feature of her sexual life with her partner and it appears that she did not communicate this before pregnancy and birth or postpartum. Another woman suggested that sexual intercourse has always been (before and since pregnancy) very quick and by not talking about her partners' premature ejaculation she is protecting his feelings. This appeared to be a pattern for a third woman, whereby she described being unable to talk about her lack of orgasm and her partners' premature ejaculation both before and after pregnancy and birth. At times it appeared that some of these women were more interested in their partner's sexual pleasure than their own, as other avenues for sexual satisfaction (e.g. mutual masturbation, oral sex) were not explored.

> *I wouldn't talk to him about, like sex, like as in, what I would like or anything like that. I just sort of…..(sigh)…like once he's happy, I'm happy sort of thing. I know that's probably terrible, but like, I wouldn't say I have the biggest sex drive anyway. I do in the intimacy way but not necessarily in the orgasm way. Like it doesn't really bother me that much, so I just let it go. But I'd never say to him, "that wasn't good or you didn't satisfy me" or anything like that. I just wouldn't. I don't know why. I guess that's something I wouldn't say. I wouldn't talk to him about*. (Aoibhe)

One woman who described being unable to talk about sexual activity also identified being unable to initiate sexual activity herself as she was afraid of being rejected. Yet, she described regularly refusing her partner's sexual advances. It is apparent that this woman experienced anxiety about the change that had taken place in her intimate relationship and her changed interest in sexual activity. She had difficultly expressing her anxiety; she avoided sexual activity and then experienced guilt associated with '*pushing him away*'.

> *And then sometimes I might be really in the mood and I'll worry, no he doesn't want to do it, so I won't do anything. Whereas, it's like if he says no, he says no.* (Rose)

5.5.2.2 Strategies to manage perception of body image and its impact of intimacy and sexual activity

Many women in this study who were not happy with the way their body looked continued to demonstrate an interest in engaging in sexual activity with their partner. They described some simple strategies to overcome their unease with their partner looking at them; keeping the lights down low, or off; covering their body with bed linen; directing their partner's gaze to their face and dressing quickly after sexual intercourse were all described.

> *Before, like I would have felt great about myself and I would have had no problem putting on some nice underwear and whatever now it's like the lights have to be off…..* (Rose)
>
> *Like yeah, I know I wouldn't be like admiring me now, and if we are having sex I'd definitely prefer to, well not like to be looked at as much you know, or whatever. Just to be more like, keep your face up here with me.* (Fabienne)

One woman described laying out her underwear on the bed, removing her towel quickly and dressing promptly after coming out of the shower in order to avoid her partner seeing her naked. The act of going to some effort to hide her body from her partner's gaze and the acknowledgement that her behaviour was very different to how she viewed herself before pregnancy caused this woman great distress. In a further excerpt from the same woman she described how the pregnancy and birth '*broke*' the intimate part of her life.

> *I'd have a towel around me. Now I'd still strip the towel off after a little while but with knicks and bra on the bed in front of me. I wouldn't just stroll around in the nip. And it wouldn't have phased me before I would have felt good before, like I'm yours, you're mine you know… Am I saying that Jake broke us (laughing) I don't mean it to sound like that but that's just, that was the determinant factor that changed things, is me falling pregnant.* (Rose)

A further strategy identified by one woman was postponing regular sexual activity until breastfeeding was reduced to 1-2 feeds per day, exercise had resumed and she was content with her breasts and body shape.

> *And then I kind of shed a lot of the weight and stopped leaking boobs and basically got my own body back. And I felt good about myself and Shane was definitely much happier with my body. But I mean we would have had sex a couple of times but not that many before six months I'd say. So as long as I was breast feeding and not running, I'd say yeah, it was limited from a sex point of view.* (Sally)

Nearly all of the women in this study identified that receiving compliments from their partner had a positive impact on how they viewed their body. While this was not a strategy that they initiated, it did have a positive impact on their perception of their body image. It positively influenced their sense of attractiveness to their partner and provided a reassurance that their partner had not lost interest in them a sexual person.

> *But he would complement me and say "ah you look very good, your figure is lovely", and I'd be like, oh it's nice to get compliments, I'd feel great.* (Jenny)

Many women were able to state confidently that they knew their partner found them attractive or that they never felt that their partner had lost interest in them sexually. This message was not relayed through verbal compliments alone but through body language, touch, being affectionate (e.g. kissing, hugging and holding hands), sitting close to one another on the couch or cuddling last thing at night when sharing the same bed. These intimate acts were as reassuring as the verbal compliments and were viewed positively by women.

A further approach adopted by women regarding their changed body image was one of acceptance. A number of women in this group described accepting their new shape, abdomen and breasts as evidence of what their body had achieved, that is, carrying a baby to term and then feeding it.

> *Yeah, like I mean your body does totally change when you're having a baby. I was always fairly happy enough with my body, but yeah, like I've a belly now that I just can't get rid of like, but sure I've had two babies, so I'm kind of not hard on myself about it. (Nyree)*

5.5.2.3 Strategies to manage guilt associated with changed interest in sex and sexual desire

Many of the strategies that women developed to counter their feelings of guilt associated with their changed interest in sex and sexual desire have been identified in the above findings, for example, creating moments of intimacy sitting together on the couch, watching a television programme together and sleeping in the same bed and talking. Talking about why they experienced feelings of guilt was seen as a means of reducing guilt by sharing their feelings and receiving reassurance from their partner that changes to their sexual lives was something they shared and dealt with as a team.

> *I was thinking, oh my God, like, what's going to happen if sex leaves your marriage are you going to end up getting divorced… I think even if your husband says to you, "look it's grand, we'll just, if we are not having it* [sexual intercourse] *for a while it's fine". You know, if it's an issue we'll talk about it.* (Aoibhe)

> *So I don't think we've ever regained the pure, the pure, purely intimate closeness of a couple since before Arlo was born. Sex has taken on a different meaning but we have talked about it. And we are both looking forward to when babies are older and we can consciously make the effort to get back to that place again.* (Sarah)

Some women described managing the guilt they felt about reduced interest in sexual activity by engaging in sexual intercourse rather than avoiding it. For some women sexual activity did

not bring sexual satisfaction, whereby women described carrying out the act of sexual intercourse but were not connected to it or to their partner during it.

> *I remember the first few times were very much initiated by him. It's just I wasn't anywhere near the idea. It took me a good few, like it was very much the mind-set that I wanted him to be happy as well in this sphere of life. And forcing myself to a certain extent to do certain things so I didn't feel bad.* (Jane)

For others, they were happy that they had engaged in sexual activity, and once foreplay commenced they began to experience sexual desire and ultimately sexual satisfaction.

> *Sometimes I'm like Jesus no, please don't even. But then I'm like, once I'm into it* [sexual intercourse] *I'm like, oh yea great I'm delighted now. You know, it's just a case of like if you were to say you'd to wait for the right moment, or the right mood, or the right. Sure you'd never do it then.* (Kate)

A number of women described engaging in sexual intercourse because a certain amount of time had passed, for example, over a month or six weeks. This could be interpreted as a response to feeling guilty that they had not engaged in sexual activity for some time. It might also suggest that women felt pressure from outside the relationship to engage in sexual activity. For example, there may be an expectation that because you are in a romantic relationship then you must also be having frequent sexual intercourse. Several women recounted that their partner did not pressurise them to engage in sexual activity, and yet women still described feeling that they should.

> *Every month, I actually used to think that it was probably about every month, because like, okay, we better do it at least once a month, that kind of thing.* (Vicky)

> *I think you have to do it* [have sexual intercourse], *you know that's the way. Kind of like, Jesus not that you have to do it, but, you know, if you haven't done it for so long you think right, you know, do it.* (May)

In summary this theme outlines the various strategies that women developed to overcome the physical and psychological challenges that impacted on their intimacy and sexual activity with their partner. Practical strategies, such as position changes and use of a water based lubricant during sexual intercourse helped greatly with dyspareunia. Good communication, verbal and non-verbal were identified as being the most successful strategy in helping women address issues related to breast changes, tiredness, being emotionally unavailable, body image and feelings of guilt about changed interest in sex and sexual desire.

5.6 Conspiracy of silence

This theme addresses the two subthemes: a lack of information sharing and baby-focused care.

5.6.1 A lack of information sharing

Several women talked about the lack of information they received from their healthcare professionals about how birth related events might impact their physical and sexual well-being in the weeks and months post birth. This was significant for those that experienced dyspareunia in the months after birth. One woman described having a sutured 2nd degree tear and experiencing severe dyspareunia for nine months postpartum. She had been informed that she had '*twelve stitches*' but was not aware that a 2nd degree tear involved tearing of a muscle layer. She related the new sensation of tightness and pain during sexual intercourse with the repair of the 2nd degree tear.

> *I was very sore* [during sexual intercourse] *but he obviously knew from his notes that I was a 2nd degree tear but I didn't know I was. And that's what I would have liked to have known, I would have liked them to tell me what was wrong. And they didn't really, and I was like, oh every woman has this thing. But they don't.* (Jenny)

Another woman who had an instrumental birth, with an extended episiotomy and a perineal haematoma, stated that she was not given enough information on any aspect of her postpartum recovery from a healthcare professional. This included information on whether pain in the perineum was normal (generally, not specifically in relation to sexual intercourse); how long pain in the perineum could last; would her birth injuries impact on her sexual health; urinary and faecal incontinence and where to go if she experienced postpartum problems. There was an overwhelming relief when she met a healthcare professional who explained things to her and validated her experience of persistent perineal pain as not being normal.

> *I'll tell ya nobody talked to me about anything…..And when I was seeing the physio* [physiotherapist] *it was great, because it felt very tailored, you'd know, that she was women's health physio… she was like telling me, "yeah this is a problem for this, this, this, and this reason"…And then you finally feel, oh right okay, you know, why didn't I do this sooner. Why is there no prompt for me to go do this?* (Fabienne)

The women recounted receiving generic routine postnatal care that was not tailored to their individual needs. The impact of mode of birth and perineal trauma were not considered when their healthcare professionals provided postnatal advice. Occasionally postnatal advice addressed resuming sexual intercourse, insomuch as, to advise women that six weeks was the '*safe time'* to resume sexual intercourse. The only other reference made to sexual health

postpartum was in relation to contraception, and often as part of discharge from the maternity hospital (one to five days after the birth) when sexual intercourse was far from most women's minds, or during the six week postnatal assessment with the GP. No woman in this study was asked by a healthcare professional about resuming sexual intercourse and/or pain or discomfort during sexual intercourse.

> *It's* [information on postpartum sexual health] *definitely something that needs improvement I think. Even if the hospitals didn't broach it with you, if your GP broached it, or your nurse, the practice nurse... It's just one question that has to be added on, is, "how is your relationship?" or "how is the intimacy?"* (Rose)
>
> *I think for me was just the whole, the lack, like, the lack of the gynaecology area, as well, even for kind of sex afterwards and stuff, like, you don't have a, you don't know what things are supposed to feel like or anything like that.* (Anna)

There were a series of missed opportunities to provide women with information about their sexual health and the potential for change to their intimate relationship and sexual activity after the birth of their baby. For example, many attended parenthood education classes with their partner. None, however, reported any discussions taking place on intimacy, sexual activity and the potential for change to interest in sexual activity or sexual desire after birth. Infant feeding is normally addressed in parenthood education classes; the lack of vaginal lubrication associated with breastfeeding was not addressed in any class women attended. Nor was it addressed by the midwife providing breastfeeding support after the baby was born, nor by the midwife who discharged them from the maternity hospital, the PHN, or their GP. As one woman described, there was no information on the '*dirty little secrets of breastfeeding*'. Many were left to source the cause of vaginal dryness and its solution themselves.

> *So I knew about certain restriction which my body kind of put on me, but you know that Google is the best friend about how you can get around them.*
> *Q Like what?*
> *A Like dryness.* (Jane)

Furthermore, the frequent interaction with a healthcare professional that occurs during pregnancy provides the ideal opportunity to discuss sexual health and changes that may occur to sexual health during pregnancy and after birth. None in this study reported that their sexual health was discussed during routine antenatal care. Finally, sexual health issues were not addressed, other than contraception, as part of routine postnatal care on discharge from the maternity hospital or with the GP six weeks after birth.

Further evidence of a conspiracy of silence from healthcare professionals in relation to postpartum sexual health was evident when women attended healthcare professionals for

birth related morbidities, such as urinary incontinence, faecal incontinence and severe perineal pain. One woman recounted attending an urologist and women's health physiotherapists for management of her urinary incontinence, describing that neither addressed her sexual health.

Oh, yeah I went to a specialist but that was about the incontinence.
Q And did they talk about sex?
A No.
Q Did they not?
A No, not really, no. I guess I was going for a specific reason though, so you're there for half an hour. (Vicky)

5.6.2 Baby-focused care

Several women identified that all routine postnatal care was directed by healthcare professionals towards the baby's well-being, with little or token reference made to maternal well-being. This exclusive focus on the baby meant that issues relating to sexual health were not addressed. This included giving information about the potential to experience sexual health issues post birth, reassurance that for many sexual health issues resolve and where to go if sexual health issues emerged or persisted.

I have always felt like the baby was always the most important part and I don't think, I don't think that's true, I really don't. I genuinely don't believe the baby after birth is more important than the mother. (Sally)

Oh nobody cares about the mother and I find it bad, there's no two ways about it. (Sarah)

A potential consequence of the absence of any discussion on postpartum sexual health by healthcare professionals is an acceptance by women that postpartum sexual health problems are normal. The conspiracy of silence from every healthcare professional involved in maternity care sends a message that women's sexual health is not important; the baby's well-being is priority; and one should be grateful for their baby's health alone. In some women's view this corresponds to the sexual script that sexual pleasure is not for women to experience, rather their purpose is to provide sexual pleasure for the male partner.

You are just, you don't want to bring it up, you think, oh, you are like, you know, okay, that's just your cross to bear now because you've had a child. (Fabienne)

This theme describes a lack of information-sharing from their healthcare professionals on sexual health along the trajectory of perinatal care. Opportunities to provide women with information about their sexual health during pregnancy and after birth were missed during parenthood education classes, and routine antenatal and postnatal care. Occasionally, resuming sexual intercourse was mentioned in the context of six weeks being an acceptable

timeframe. Commonly, contraception was the only sexual health issue discussed by midwives with women. Women expressed discontent with the overt focus on the baby during routine postnatal care.

5.7 Seeking help and sources of support

Help-seeking is an active behaviour where women purposively sought out help for a problem they were experiencing. Included in the theme are the subthemes of formal help-seeking behaviour and informal support structures.

5.7.1 Formal help-seeking behaviour

There was limited evidence of women actively seeking help for sexual health issues. One woman specifically made an appointment with her GP to seek advice and support for dyspareunia as her pain during sexual intercourse was becoming unacceptable, and detrimental for her mental well-being.

> *Ah I can't have this* [dyspareunia] *now, I need to, I can't not do this* [enjoy sexual intercourse]*. Because it's terrible for our mental, me and Sam's mental state. We need to work on this like.* (Jenny)

For this woman the advice she was given was generic and unhelpful. For example, she was told to '*massage away'* without instruction, direction on where to get instruction, and without her GP visually inspecting her perineum or performing a vaginal examination.

No other woman described specifically attending their GP to discuss a sexual health issue, even though several described persistent dyspareunia. Many prioritised baby care over their own sexual health needs. Others assumed that the pain would resolve with time, indicating that they felt an improvement in pain or that some pain was a normal consequence of birth. It is likely that the lack of visibility of sexual health in routine postpartum care made women reluctant to ask their healthcare professional about their experience; there was an underlying message that women's sexual health is not important.

> *No, I didn't, I don't think I consciously decided not to talk to a doctor about it, I took a bit of a wait and see approach and because I wasn't massively driven to have sex in the first place. It wasn't really something that I was more worried about the baby taking only twenty minute naps at a time and you know, the very practical elements of life. It wasn't something that I rushed to talk to anybody about*. (Sarah)

I just think of all the things that people are just getting on with because they think that's their cross to bear, which is shocking really. (Fabienne)

Routine child development assessments carried out by the Public Health Nurse (PHN) could be an opportunity to seek advice from a healthcare professional regarding sexual health. However the support and advice offered to one woman proved to be generic and unhelpful.

I asked about that [persistent dyspareunia], *I was asking generally about stuff, and then I asked about that* [persistent dyspareunia], *and then she [PHN] just went, "oh well you know do this massage thing"…. that's illusive.* (Jenny)

More commonly when women were seeing a women's health physiotherapist about another complaint, (e.g. faecal incontinence, urinary incontinence or severe perineal pain) sexual health was included in their assessment.

They did, when did they do it? [offer advice on sexual health] *I think not until I had the procedure done. Yeah but I don't think it would have entered anybody's head that I would even considered it at that stage.* (Caroline)

Including sexual health in the physiotherapist's assessment was not always the case; some treated the presenting complaint (urinary incontinence) only. Whereas, some women took the opportunity that a consultation provided with a women's health physiotherapist to ask about dyspareunia. One woman felt that she was given so little information that she was unable to recognise that the faecal incontinence and dyspareunia she was experiencing were unacceptable and could be treated. She only received treatment for her problems when she was pregnant again and attending the maternity hospital more than one year after the birth of the first baby, when she raised the discussion.

Did they ask you about sex at the booking visit?
A No, no. I brought it up.
Q Okay.
A I brought up any of the problems I was having with the midwife. Because my sister-in-law had told me to. So that was the only thing that prompted me. (Fabienne)

5.7.2 Informal support structures

Women talked to other women about intimacy and sexual activity after birth. Many women joined mother and baby groups in person or online as a source of support during the first year postpartum. These fora afforded the opportunity to talk about an array of issues including adapting to motherhood, relationship issues, worry over baby care and their own well-being. Women did not join these groups specifically to address concerns about intimacy and sexual activity, more so, the groups facilitated a forum to bring up these concerns in a safe non-

judgemental environment with other women who were sharing a similar experience, that is, first-time motherhood.

> *We'd be laughing because I was telling them what Sam was doing like, "watch the telly and I'll sort you out". They started laughing, going, "my husband, I didn't let him go near the room", they had them sleeping in another room. They were like "no, no, it's months"… I was like oh right I just wanted to know, because nobody else would talk about that.'* (Jenny)

Talking about intimacy and sexual activity with other mothers happened naturally within mother and baby groups.

> *Yeah if you wanted to* [talk about sex], *yeah definitely. I have since, like I've been open about it since. I haven't mainly talked about sex though, it's more issues but people would say, "oh God I haven't had sex in ages, since the baby came along", or stuff like that*. (Vicky)

Many women compared themselves and their relationships to the women they met in the mother and baby groups or to other female friends. For many it was a source of reassurance that other women had similar experiences, such as reduced interest in sex and sexual desire. In some cases, women felt that their own intimate relationship was more positive and satisfying than the descriptions that other women gave of their relationships.

> *Like, one of my friends, she had an episiotomy, so she's, her little baby now is six weeks old and she was like I'm nowhere even near thinking about sex.* (Brenda)

> *And when I am talking to my friends, I have only one friend that like she has a baby and she is still excited to do it* [sexual intercourse]*. But she has kind of orgasm, so maybe that's why she. So I think that maybe something wrong with me. But I have close friends in here as well, she has no orgasm.* (Joanna)

Women shared solutions to the problems they encountered with each other frequently, such as using gel for vaginal dryness and being strategic about making time for sexual activity.

> *I have a very good friend and she asked me like what it was like after, the first sex after I had my daughter two years ago. And I told her, like, if you are planning anything just get a lot of gel. You will need it, and she said that's great advice.* (Leila)

> *Like friends of mine say, "oh we do it every Sunday at four o'clock", this kind of crack, and I used to laugh at them, but now I think, God maybe that's something we need to do, like we know they're asleep at this time on a Sunday.* (Fiona)

Women sourced information and advice online from '*Dr Google*'. Vaginal dryness, 2nd degree tears, complications of forceps birth and sex after birth were all searches that women carried out. When women were not given the information they required from their healthcare

professional they sourced it elsewhere, this included videos on perineal massage and pelvic floor exercises.

> *If you breast feed you get plenty of time to consult doctor Google but I don't think it's the best way to do it.* (Jane)

> *I was never told a forceps had a massive, like there's a huge risk of having incontinence issues, never told that, I found that myself out on the internet.* (Vicky)

Women spoke of being cautious in interpreting what they read online. Many described using websites, such as the Chartered Society of Physiotherapy website, babycenter.com and the National Childbirth Trust website to get accurate up-to-date information.

> *This is the thing, there can be so much inaccurate information and you can diagnose yourself with anything you want once you go into google. You can put your symptoms in and come back with whatever you want. (Jenny)*

This theme has shown the limited health service-seeking behaviour demonstrated by women in this study. Women used the opportunity that consultations about other health issues or routine child development assessments brought to ask about their sexual health. Often women were disappointed with the advice that was offered. More commonly women sourced their own information from reliable websites and other women. It was apparent that first-time mother's greatest source of informational and emotional support in relation to changes to their sexual health came from other mothers and female friends.

5.8 Summary of women's experience of their sexual health after birth

Women in this study identified kissing, hugging, cuddling, sleeping in the same bed and sexual activity as important features of being intimate with their partner. Engaging in sexual intercourse was viewed as a means of connecting with their partner that women could not achieve through other forms of intimacy and communication. Women described how they approached resuming sexual activity after birth, considering issues such as their own sexual desire, their partner's sexual desire and their fear and/or apprehension about resuming sexual activity. Woman often planned resuming sexual activity around going away without the baby or to coincide with someone minding the baby for them. Timing of when to resume sexual activity was also considered by women. Early resumption of sexual intercourse (three to six weeks) was sometimes associated with pain and described in negative terms. Mode of birth and perineal trauma featured for women when they spoke about resuming sexual intercourse, that is, women who had instrumental births and severe perineal trauma (extended

episiotomies, OASI or painful sutures) delayed resumption of sexual intercourse until three and four months postpartum.

Numerous challenges, both physical and psychological, to intimacy and sexual activity were experienced by women. Some of the physical challenges described by women were pain, breast changes, a lack of vaginal lubrication and extreme tiredness. Women continued to demonstrate an interest in intimacy and sexual activity as they endeavoured to overcome the challenges they experienced. Position changes during sexual intercourse, using water-based lubricants, taking longer during foreplay and being less vigorous during sexual intercourse helped with pain-related issues. Extreme tiredness was described by most in this study, often in conjunction with being busy. Planning sexual activity for weekends, going away without the baby and/or having someone mind the baby all helped women to connect emotionally with their partner and facilitated building up to sexual intercourse slowly without the distraction of the baby and household related issues.

Altered perception of body image, being emotionally unavailable and feelings of guilt associated with reduced interest in sex and sexual desire were described by several women as psychological challenges to intimacy and sexual activity since the birth of their first baby. Good communication was seen as the most powerful tool to overcome these challenges. Honestly identifying why they felt guilt, how they perceived their body image and their sense of attractiveness positively influenced being emotionally available to their partner and reduced feelings of guilt and discontent with their body image.

There was a lack of help-seeking behaviour demonstrated by women regarding their sexual health after birth. It is likely that this is a direct result of the conspiracy of silence demonstrated by healthcare professionals. Sexual health information and advice was absent from routine postnatal care and when women did ask they found the support and advice to be lacking and unhelpful. The lack of visibility of sexual health as a topic of concern for healthcare professionals in turn led to an acceptance that sexual health issues are a normal consequence of childbirth and to be suffered in silence. Non-healthcare professional sources that women turned to were other first-time mothers from mother and baby groups, other female friends with children and the internet.

Chapter 6 Discussion of findings

6.1 Introduction

This chapter, the penultimate chapter, presents a discussion of the key findings of this study; integrating the quantitative (phase 1) and qualitative (phase 2) results, with reference to empirical and theoretical literature. The findings are discussed under the following five headings: sexual health and sexual satisfaction, sexual health morbidity, women's conceptualisation of sex and body, strategising and solutions, and perpetuating the silence. In advance of this discussion, a summary of the key findings from the integration of the results from Phases 1 and 2 are presented. Finally, the strengths and limitations of the study are discussed.

6.2 Summary of study findings

A summary table of the key findings or meta-inferences is presented below (Table 6.1). This table aims to illustrate how the key study findings emerged from the integration of the results from Phases 1 and 2, and to draw the reader's attention to the key findings that contribute to the discussion sections in the remainder of this chapter. The meta-inferences presented in Table 6.1 emerged as a result of review of the qualitative and quantitative data, with an emphasis on findings that were similar and divergent. In addition, qualitative findings that helped illuminate quantitative results were emphasised. To add rigor to the process the overarching inferences and their supporting data were validated thought independent review by my supervisors.

Table 6.1 Summary of key findings and illustrative supporting data from Phase 1 and Phase 2 of this study

Meta-inferences	Supporting findings from Phase 1	Supporting findings from Phase 2
Many women remained satisfied with their overall sexual life after birth, and body image. Although negative perception of one's body image was a risk factor for several postpartum sexual health issues.	• Most women (89.5%, n=475) were satisfied with their sexual life prior to pregnancy. Although this reduced to 68% (n=361) at twelve months postpartum, it indicates that a majority of women, overall, are satisfied with their sexual life one year after childbirth. • Similarly, 92.5% were always or sometimes satisfied with their body image pre-pregnancy and 84% remained so twelve months postpartum. • Being never satisfied with one's body image at six months postpartum is a risk factor for a lack of vaginal lubrication, a loss of interest in sex and non-resumption of sexual activity. • Twelve months postpartum being never satisfied with one's body image remained predictive of a loss of interest in sex and dissatisfaction with overall sexual life. • Experiencing pre-existing dyspareunia, severe perineal trauma, breastfeeding and being sometimes or never satisfied with one's body image are risk factors for dissatisfaction with overall sexual life twelve months after birth.	• Women did not directly verbalise a dissatisfaction with their sexual life, although they did speak about a longing to return to their previous pre-pregnancy sexual life. • Women were not prepared for the changes experienced to their intimate relationship, although they adapted and developed strategies to overcome changes experienced. • Many women who were unhappy with their body image did not let this negatively impact on engaging in sexual activity. However, for others, they described a damaged sense of attractiveness, and this impacted on their interest in sex and sexual desire. • Some women avoided sexual activity and avoiding being seen by their partner naked. • Avoiding sexual activity, avoiding affection (kisses, hugs and cuddles), regularly refusing their partner's advances for sexual activity and being afraid of rejection if they initiated sexual activity were described by women who were distressed by their dissatisfaction with their body image. • Some women viewed their body through the lens of their achievements (i.e. carrying a baby to term, birthing their baby, and in some cases feeding their baby) as a means of accepting changes to their body shape and size.
A number of issues were identified that impacted negatively on women's sexual health.	• Pre-existing dyspareunia is a significant risk factor for developing sexual health issues during the first year postpartum; 29.3% (n=184) women experienced dyspareunia in the twelve months prior to becoming pregnant. • Pre-existing dyspareunia is a risk factor for experiencing dyspareunia, a lack of vaginal	Some women described delaying resumption of sexual intercourse because of fear and apprehension of dyspareunia. • Dyspareunia was associated with a feeling of vaginal tightness and vaginal dryness that had not been there before birth. • Dyspareunia influenced when women resumed sexual intercourse, how they engaged in sexual intercourse (i.e. lacking spontaneity, less vigorous and different positions) and what sexual activities

	lubrication and a loss of interest in sex at six months postpartum. • Pre-existing dyspareunia is predictive of dyspareunia, a lack of vaginal lubrication and dissatisfaction with overall sex life twelve months postpartum. • Non-resumption of sexual activity three and six month postpartum is associated with experiencing pre-existing dyspareunia. • 53.4% (n=339) of women reported dyspareunia three months postpartum. This reduced to 37.5% (n=236) six months postpartum and was 20.5% (n=129) twelve months postpartum. • OASI, pre-existing dyspareunia and breastfeeding emerged as significant factors for dyspareunia at six months postpartum. • >35 years and pre-existing dyspareunia remained predictive of experiencing dyspareunia twelve months postpartum.	they engaged in (i.e. oral sex). Women also identified other issues that negatively impacted on their ability to be intimate and engage in sexual activity. Examples include: • Mismatched sexual desire with their partner. • Feelings of guilt: Women recounted feeling guilty about their changed interest in sex and sexual desire, and some felt obliged to engage in sexual activity. • Fearing being misunderstood: Women avoided sexual activity, and two women spoke about avoiding being affectionate with their partners because they feared being misunderstood and that showing affection might/would be mistaken as an invitation for sexual intercourse. • Physical influences: Extreme tiredness, pain and breast changes. • Being busy with baby care and household chores, limited alone time and limited time alone as a couple were described as negatively impacting on the intimate relationship. • Not emotionally connected with partner: Being exclusively focused on the baby and an inability to communicate their needs to their partner also had a negative influence on intimacy and satisfaction with sexual life.
Many women experienced sexual health issues during the twelve months before pregnancy.	• 36.6% of women experienced a lack of vaginal lubrication prior to pregnancy. • Dyspareunia was experienced by 29.3% of women before pregnancy. • 34.1% of women had difficulty achieving orgasm pre-pregnancy and 19.7% were unable to achieve orgasm. • 33% of women reported experiencing a lack of interest in sex during the twelve months prior to pregnancy.	• Some women described mismatched sexual desire being a feature of their relationship prior to pregnancy and birth. • Two women described being unable to achieve orgasm before pregnancy. This did not negatively impact on their overall satisfaction with their sexual relationship. It did however cause some frustration for one woman. The other woman did not talk to her partner about her inability to reach orgasm during sexual intercourse. • One woman described being unable to discuss the impact of her partners' premature ejaculation during sexual intercourse on her sexual satisfaction.

Breastfeeding is associated with several postpartum sexual health issues.	• Breastfeeding was predictive of experiencing dyspareunia, lack of vaginal lubrication and a loss of interest in sex at six months postpartum. • At twelve months postpartum, breastfeeding was a risk factor for a loss of interest in sex and dissatisfaction with overall sex life.	• Breastfeeding mothers described the challenge they experienced accepting the dual role of their breasts. They no longer related their breasts to sexual arousal and foreplay, but to the baby, milk, leaking milk and changing size and shape. Women recounted not wanting their partner to touch their breasts; there was a fear that milk could leak or '*squirt*' which did not engender feelings of sexual attractiveness. • Breastfeeding women recounted being '*all touched out'* from the close physical contact they had with their baby. • Breastfeeding women felt emotionally unavailable to their partner; a result of bestowing all their love, attention and concern on their baby. This resulted in women being uninterested in affection from their partner (kissing, hugging and cuddling) and also being emotionally unavailable to them. • Nearly all mothers (irrespective of feeding choice) described extreme tiredness. Breastfeeding mothers had the additional sleep interruption of night time feeds that cannot be shared.
Resumption of sexual intercourse post birth was influenced by a number of issues.	• More than one third of women had not resumed sexual activity eight weeks postpartum (37.7%, n=311). • Less than one quarter of women had not resumed sexual activity three months postpartum (22.4%, n=192). • Delayed resumption of sexual activity (>3months) was associated with: being >35 years, reporting pre-existing dyspareunia, OASI, breastfeeding and a poor perception of one's body image. • These associations persisted for women who had not resumed sexual activity six months postpartum.	• Women who had an instrumental birth described being fearful and apprehensive, and reported delayed resumption of sexual intercourse until three months or after postpartum. • The presence of sutured perineal trauma (a 2nd degree tear, episiotomy or an OASI) was associated with apprehension and anticipation of dyspareunia when planning to resume sexual intercourse. • Women expressed an awareness that their partner's sexual needs were not being met and this influenced their decision to resume sexual activity.
There were several opportunities missed by	• Of the women who reported sexual health issues at six and twelve months postpartum, 3% or less reported discussing it with a healthcare professional.	• Women were not asked about their sexual health during their booking visit when detailed obstetric, medical, surgical and social history was taken. • Sexual health was not assessed at routine antenatal visits.

healthcare professionals to prepare women for changes to their intimate relationship after the birth of their first baby		• Breastfeeding women were not advised during pregnancy or postpartum about the association between breastfeeding and a lack of vaginal lubrication. • Postnatal consultations did not include a discussion on resuming sexual activity and/or dyspareunia. • Healthcare professionals did not provide individualised information to women on the potential impact of mode of birth or perineal trauma on their postpartum sexual health. • When women did present to a healthcare professional with another birth-related morbidity, such as urinary incontinence; sexual health was not included in their overall assessment. • Women were acutely aware of an overt focus of postpartum care on the baby's well-being over their own.
Few women discussed their postpartum sexual health issues with a healthcare professional.	• Of the women who reported sexual health issues at six and twelve months postpartum, 3% or less discussed it with a healthcare professional.	• One woman interviewed actively sought out a healthcare professional regarding the persistent dyspareunia she was experiencing. • Women developed strategies with their partner to manage changes and did not seek professional help. • Women appeared to accept sexual health issues as a normal consequence of birth and did therefore not seek professional help. • Women also appeared to take a '*wait and see*' approach rather than seeking help from a healthcare professional.
Women were active agents in developing strategies to manage changes to their intimate relationship and sexual activity.		Women described how communicating effectively with their partner had a positive influence on being intimate and engaging in sexual activity. Examples include: • Couples worked as a team, viewing sexual health issues as the couple's issues rather than the woman's alone. • Couples developed strategies to overcome dyspareunia (i.e. different positions during sexual intercourse, taking longer during foreplay, being less vigorous and perineal massage). • Women planned alone time with their partner to sit together and watch a television series. They planned time away from the baby to connect as a couple without distraction of baby and household

		issues and to engage in sexual activity. They also planned opportunities to engage in sexual activity during baby nap times, at weekends and when stress, work issues and tiredness were not impacting on their lives. • Women expressed their fears and anxieties to their partner about adapting to their role as a mother, and the effect that tiredness, busyness and their body image had on their desire for intimacy and sexual activity. • Being affectionate with one another was a form of non-verbal communication that reaffirmed intimacy and closeness in the relationship. • Accepting compliments from their partner was seen as positive reinforcement and helped women view their body positively.

6.3 Sexual health and sexual satisfaction

High rates of satisfaction with overall sexual life were seen in the current study. Sixty-eight per cent of women reported satisfaction with overall sexual life twelve months postpartum, despite prevalence rates of between 9% and 40% of sexual health issues at this time point. This corresponds well with the 62% of 1,038 Norwegian women aged 18-67 years who were sexually satisfied in heterosexual relationships (Træen 2010). It is generally accepted that satisfaction with sexual life decreases immediately postpartum (DeJudicibus & McCabe 2002, Leeman & Rogers 2012, Faisal-Cury *et al.* 2015) and improves by twelve months postpartum (van Brummen *et al.* 2006, Safarinejad *et al.* 2009, De Souza *et al.* 2015).

Sexual satisfaction is influenced by the frequency of sexual intercourse (Træen 2010), children under the age of twelve years in the household (Træen 2010), matched/mismatched sexual desire (McNulty *et al.* 2016), relationship satisfaction (Fallis *et al.* 2016) and marital issues (Byers 2005, Traeen 2008). Women in the current study described having mismatched interest in sex and sexual desire to their partner. This echoes findings from Ahlborg *et al.* (2000), DeJudicibus & McCabe (2002), Ahlborg *et al.* (2005), Ahlborg & Strandmark (2006), Pastore *et al.* (2007), Ahlborg *et al.* (2008) and Schlagintweit *et al.* (2016). Pastore *et al.* (2007) also found that greater sexual desire by the male partner than that of the woman was one of the top postpartum concerns for first-time parents twelve months after birth.

Relationship satisfaction and sexual satisfaction appear to be casually linked but distinct constructs, with one often influencing the other (DeJudicibus & McCabe 2002). The debate on whether relationship satisfaction can predict sexual satisfaction continues (Byers 2005, Lawrance & Byers 2005, Rosen *et al.* 2017a) and is not resolved here. Nonetheless, the association between relationship satisfaction and sexual satisfaction is important to a discourse on postpartum sexual health. Findings from the current study resonate with what has been identified in the literature as positively influencing relationship satisfaction; they are: well matched sexual desire (Ahlborg *et al.* 2005, Ahlborg *et al.* 2008, Sutherland *et al.* 2015), effective communication between the couple (Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Hansson & Ahlborg 2012, Fallis *et al.* 2016), time for couple activities (Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Træen 2010), alone time (away from partner and the baby) (Olsson *et al.* 2005), avoidance of extreme tiredness (Ahlborg *et al.* 2005, Rosen *et al.* 2017b), avoiding being exclusively focused on the baby over the partner (Ahlborg & Strandmark 2001, Ahlborg *et al.* 2005, Ahlborg & Strandmark 2006, Woolhouse *et al.* 2012) and support from

partner with baby care and household issues (Moller *et al.* 2008, Ahlborg *et al.* 2009, Woolhouse *et al.* 2012).

The prevalence of sexual health issues in the current study reduced from three to twelve months postpartum and, in some cases, prevalence rates were less twelve months postpartum than reported pre-pregnancy (e.g. dyspareunia, lack of vaginal lubrication and problems with orgasm). A reduction in prevalence rates of sexual health issues have been observed in several other studies (Serati *et al.* 2008, Safarinejad *et al.* 2009, McDonald *et al.* 2015a) as postpartum time elapsed, although not to pre-pregnancy rates. Nonetheless, one fifth of women self-reported dyspareunia and one quarter had problems achieving orgasm twelve months after birth in the current study. There appears to be a discord between the high levels of sexual satisfaction and high prevalence rates of postpartum sexual health 'problems' or 'dysfunction' in the literature. Results from studies using objective measurement tools to measure postpartum sexual health indicate that large numbers of postpartum women experience sexual dysfunction. Yet, women's subjective rating of their sexual satisfaction tells a very different story. There may be a number of explanations for this; firstly, the tools frequently used are based on the dated DSM classifications of sexual dysfunctions and consequently results show high prevalence rates of disorders of desire, arousal, orgasm and dyspareunia. Secondly, the measurement tools evolved from linear and male sexual response cycles, thus ignoring the complex and individual nature of female sexual response. Finally, when women rate their sexual satisfaction they may not be considering sexual desire, vaginal lubrication, sexual intercourse and achieving orgasm. Moreover, they may be rating intimacy, affection, emotional closeness and relationship satisfaction. A challenge going forward is to incorporate these relational features of sexual health in future research and discourse on women's postpartum sexual health.

6.4 Sexual health morbidity

Significant postpartum sexual health issues are commonly experienced three and six months postpartum. However, prevalence rates in the main returned to pre-pregnancy levels, or lower at twelve months postpartum. Women's self-reported loss of interest in sex did not return to pre-pregnancy levels twelve months postpartum. Nearly 40% (n=260) of women experienced a loss of interest in sex at twelve months postpartum. The response to a loss of interest in sex seen in the current study resembles that reported in the literature on reduced sexual desire,

particularly so when there was a mismatch in interest in sex in the couple dyad. Decreased interest in sex and sexual desire is a common experience for women post birth, but despite this, women continue to report an associated guilt. It appears that women are internalising the ever-present and unrealistic socially constructed message that women can be everything, that is, the caring mother, the loving wife and the beautiful sexy partner (Douglas & Michaels 2005, Liechty *et al.* 2017). It seems that when women do not live up to these unrealistic expectations, the reality of life with their new baby and changed interest in sex and sexual desire, feelings of guilt ensue. In the current study the question is very specific: 'in the past three months have you experienced a loss of interest in sex compared with before pregnancy?' The literature commonly assesses sexual desire, but as to what time point/when, is often unclear. For example, the Female Sexual Function Index (FSFI) asks a series of questions on the experience of sexual desire in the previous four weeks (Rosen *et al.* 2000), whilst others asked: 'at present do you feel desire to have a sexual life?' (Faisal-Cury *et al.* 2015). Yet, the majority of authors then report in general terms on sexual desire, thus, even within the literature that reports on the impact of birth on sexual desire there are difficulties interpreting results. Furthermore, I suggest based on the current study finding, that a cognitive interest in sex needs to be present prior to the experience of sexual desire, therefore making direct comparisons between research results on altered interest in sex and altered sexual desire postpartum problematic.

An unexpected finding in the current study was the proportion of women who self-reported experiencing dyspareunia in the twelve months prior to becoming pregnant (29.3% n=184). Although this finding is similar to that of McDonald *et al.* (2015a) where 28.2% of nulliparous women reported dyspareunia during the twelve months before pregnancy, it is significantly more than the 12% reported by Barrett *et al.* (2000) and the 10% reported by Bertozzi *et al.* (2010). Whilst these three studies acknowledge the presence of pre-existing dyspareunia, there is little discussion on whether these findings mirror the trend in studies of women of similar age drawn from the general population. In the British National Survey of Sexual Attitudes and Lifestyles (Natsal-3) the prevalence of dyspareunia was 7.5% in all women (9.5% in 16-24 year olds, 8% in 25-34 year olds and 5.2% in 35-44 year olds) (Mitchell *et al.* 2013, Mitchell *et al.* 2017); a prevalence of 9.3% was seen in a sample of 3,017 Swedish women aged 20-60 years; here, a similar trend of higher prevalence in younger women was also found (Danielsson *et al.* 2003). This suggests that the prevalence of pre-pregnancy dyspareunia in the present study sample is much higher than the general population of women. This might be explained by the enthusiasm of women with pre-existing sexual health issues to take part in a

study about sexual health after birth. They may feel that while there is no personal gain for them and their sexual health experience, by participating in a study on sexual health others might benefit and learn from their experience. Recall bias and the lack of specificity in the survey question on whether dyspareunia was a once off experience or a persistent experience that caused distress in the current study might explain the high pre-pregnancy prevalence of dyspareunia.

A significant contribution of the present study to the advancement of knowledge on postpartum sexual health is the clear association between breastfeeding and the development of several postpartum sexual health issues; this association is either unknown or ignored by promoters and supporters of breastfeeding (i.e. midwives, GPs, Public Health Nurses and the Health Service Executive (HSE)). In an era of promoting breastfeeding, one could question whether the drive to improve breastfeeding rates by 2% per annum in Ireland up to 2021 (HSE 2017) increases the potential for practitioners to ignore or trivialise this association. In a professional or practice context that emphasises women-centred care and disclosure, and a policy context that promotes breastfeeding; there is potential for internal conflict or cognitive dissonance to occur. Cognitive dissonance occurs when people experience inconsistency between different cognitions or between cognitions and behaviour (Festinger 1957). Practitioners may struggle with the professional imperative to inform women of the impact of breastfeeding on dyspareunia, vaginal lubrication and loss of interest in sex at the same time as fearing a decrease in women's willingness to breastfeed if the impact is known. To resolve this conflict, practitioners may choose to prioritise breastfeeding and health of the baby over women's sexual health. However, information regarding breastfeeding needs to take account of these findings, if care is to be 'woman-centred' as opposed to 'breast-feeding centred' (Carroll *et al.* 2015) and if women's right to information and autonomy is to be respected.

6.5 Women's conceptualisation of sex and body

There are a number of factors that impact on women's postpartum sexual health and one of them is the way women construct their bodies and their sexuality. This was evident in the narrative from breastfeeding mothers who described the challenge they had accepting the dual role of their breasts. Excluding the breasts during sexual activity was described by women in the current study and also identified by Martínez-Martínez *et al.* (2017). The changed view of the breasts has similar connotations to women's changed view of themselves as sexual beings. Women interviewed by Woolhouse *et al.* (2012) consistently described the role of

motherhood as not a sexy one, and how becoming a mother had negatively affected their sex life. Women interviewed by Olsson *et al.* (2005), similarly, no longer viewed their breasts as relating to sexual activity and had a changed attitude to their sense of self as a sexual person since becoming a mother. This corresponds to the one third (n= 184) of women who reported some degree of difficulty with their breasts having a dual role in a study in the United States (Avery *et al.* 2000). Although dated, von Sydow (1999) in a meta-content analysis of fifty-nine studies suggested that one-third of women found breastfeeding to be an erotic experience due to the close physical contact of the baby with the nipples; she also determined however, that women felt guilt as a result of these feelings. This juxtaposition could explain women's difficulty with the dual role of the breasts; a strategy to overcome this may be to view the breasts as a source of nutrition only for their baby and to avoid the breasts completely during sexual activity. It is also possible that the repeated sexualisation of breasts in society; in print media, social media, television and film have also challenged women to accept that their breasts can comfortably have two roles (Harvey *et al.* 2004, Waxman 2014).

Some women constructed their body image and sexuality in a broad context. For them, sexuality wasn't just about sexual activity, but was about intimacy and affection with their partner. However, as time passed certain body image changes impacted on the way they thought about their body and as a consequence, how they thought about sexual activity and their intimate relationship with their partner. The majority (84%) of women in the current study were always or sometimes satisfied with their body image twelve months postpartum. Nevertheless, the narrative on how women felt about their postpartum body contributes to the notion that this view had an impact on how women saw themselves as sexual beings. Jawed-Wessel *et al.* (2017) reported that women who had caesarean section (CS) reported more body dissatisfaction than women who had a vaginal birth, suggesting that the presence of the abdominal scar was an influencing factor. They also suggest the possibility that women who had a vaginal birth were 'prouder' of their body's performance during labour and birth than their counterparts who had a CS (Jawed-Wessel *et al.* 2017, p. 627). This might explain women's described dissatisfaction with the presence of abdominal scars in the current study. Feeling 'proud' of one's body is likely to contribute to an overall positive perception of body image and sexuality.

The additional concern about how their partner viewed their body was recounted by women in the current study. This is supported by prior research, which suggests the importance of perceived partner satisfaction with one's body for one's own body image satisfaction (Meltzer

& McNulty 2010, Mickelson & Joseph 2012). Postpartum sexual health and women's construct of their body appear to be linked in some instances to whether a woman believes her partner is satisfied with her body.

A further complexity to women's conceptualisation of their sexual self is the fear of rejection by their partner of their sexual advances (Mickelson & Joseph 2012). Research from the Netherlands has suggested that rejection of one's sexual advances is likely to have strong implications for an individuals' body image satisfaction, especially for women (de Graaf & Sandfort 2004). It is likely that *vice versa* is true, in that, body image dissatisfaction is probably also related to perceived sexual rejection. It could be argued that in some cases when body image satisfaction is very low, women may be very subtle in their sexual advances for fear that a more direct advance would be rejected. In fact, this subtlety may be so ambiguous to the partner that it leads to the feared rejection. It was not within the scope of this study to include partners' experience of postpartum sexual health; however, in other studies it has been shown that 54% of women and 43% of men remained concerned about 'change in the women's own body image' twelve months after birth (Pastore *et al.* 2007, p. 119).

6.6 Strategising and solutions

This study positions women as positive agents in resolving the sexual health challenges they encountered. They are active agents in sourcing information and support that is relevant to them and their intimate relationship after birth. Women do not seek help from healthcare professionals, although this could be the result of healthcare professionals not asking and effectively not giving women permission to discuss their sexual health. It could also be related to the absence of contact with healthcare professionals at the appropriate time postpartum. Women in the general population also do not seek help from healthcare professionals for sexual health issues. Azar *et al.* (2013) suggest this could be because: sexual health problems are not viewed as life threatening, there is an assumption that they will self-resolve, talking about sexuality may be considered taboo and healthcare professionals do not bring up the subject. In the absence of healthcare professional advice women in the current study became active agents in finding solutions for themselves; which is evidenced in the strategies that women developed to overcome challenges to their intimate relationships in this study.

It was an objective of the current study to identify the health service-seeking behaviour of women regarding their postpartum sexual health, but in fact I discovered something different.

Women rarely spoke to a healthcare professional about their postpartum sexual health; instead they sought help elsewhere; from family, peers and the internet. Shaw (2001) suggests that for persons to demonstrate help-seeking behaviour they need to be aware of symptoms, to feel threatened by it (or consider it a serious ailment or disease) and to think it can be treated. I suggest that women in this study were aware of their sexual health issues and did want to do something about it, but healthcare professionals through their silence at no stage indicated that they might be able to respond to women's needs. In the absence of healthcare professional help women sought out other sources of help. Women sourced information online, talked with female friends and they also engaged in conversation in their relationships. This solutioning also took place within the relationship, where sexual health issues were viewed as couple issues and not just the woman's issues. This resonates with the theme 'coping by communication' identified by Ahlborg & Strandmark (2006, p. 163) as a positive feature of the couple dyad that helped maintain the quality of the intimate relationship.

Sourcing information online is a positive active behaviour demonstrated by women. However, not all women will have the level of education that the women in this study had, consequently some women may not have the skills to discern quality information or critique the source of that information. Aston *et al.* (2018) described how first-time mothers in Canada navigated advice and information from a variety of sources: online, healthcare professionals, friends and family. Women found the process of searching for information that was suited to, and relevant to them labour intensive and required time, effort and critical thinking. Women in the current study were well educated (70.6% to degree level or above), which increases the potential likelihood that they could discern valid from invalid information. It is also likely that they had an ability and confidence in their language skills to communicate about sex and intimacy to other women and their partner (most were married). However, there may be women who did not participate in this study who do not have the ability or awareness to talk to other women or be comfortable enough in their relationship to discuss their experience of sexual health after birth. Notwithstanding the importance of supporting women's autonomy to source information, assuming that all women will find their own solutions is in itself problematic. For other women who have been socialised to remain silent about sexual health and intimacy they may not have the confidence to speak to friends or partners about solutions to sexual health issues experienced.

Solutioning began at an early stage postpartum; the planning and consideration that women engaged in around resuming sexual activity post-birth is evidence of this. The decision to

resume sexual activity after birth is influenced by many factors, both physical and psychological. Mode of birth and perineal trauma were associated with feelings of fear and apprehension in relation to the anticipation of dyspareunia on first sexual intercourse postpartum. In modern day obstetric practice only a small proportion of women having their first baby will achieve a spontaneous vaginal birth with an intact perineum. In the current study the proportion was approximately 13%. It is reasonable to assume then that most women will have some level of apprehension about resuming sexual intercourse after birth.

Despite previous studies on women's sexual health after birth, none have identified the strategies that women used to overcome sexual health issues to the depth and detail described in the present study. This new information can be used in educating and preparing women for potential changes to their sexual health after the birth of their first baby. It can be used to normalise transient postpartum sexual health changes, while also unlocking a discourse on postpartum sexual health. Women are often described as passive agents by researchers (Greene & Faulkner 2005, Palmer-Mehta & Shuler 2017) whereas in fact women are taking things into their own hands and positively engaging in solutioning.

6.7 Perpetuating the silence

The silence and denial around sexuality in society is evidenced in the current study. Healthcare professionals are not asking women about their sexual health during pregnancy or after birth. The present study has shown that healthcare professionals missed numerous opportunities to prepare women for changes to their sexual health; to offer advice and support and share strategies that other women found helpful in maintaining a satisfying intimate relationship. These missed opportunities I believe perpetuate the silence surrounding women's sexual health in society. The literature identifies the importance of healthcare professionals opening the dialogue on sexual health. Fitzpatrick & O'Herlihy (2005) recommended that healthcare professionals must recognise that women rarely volunteer information about dyspareunia and, rather than passively waiting for women to disclose (Higgins *et al.* 2006), they must directly question women. Additionally, McDonald *et al.* (2015a) found that of the 24% (n=297) of women who were asked directly about their sexual health by their General Practitioner (GP), these women were four times more likely to discuss their sexual health compared to those who were not asked by their GP.

Previous research shows that most healthcare professionals believe that they have insufficient education (Jones *et al.* 2005, Kong *et al.* 2009) and feel unprepared (Saunamäki & Engström 2014) to discuss sexual health issues with their patients. Some GPs feel deskilled by the perceived preference of patients to see a same sex practitioner in relation to sexual health issues (Hinchliff *et al.* 2004). This perception is not without justification. It has been demonstrated that Canadian women prefer their GP to be of the same gender (Ahmad *et al.* 2002), and both men and women in Australian research indicated a preference for same gender healthcare professional for sensitive consultations (Chur-Hansen 2002).

Midwives have identified that they consider sexual health an important issue to address but find it difficult to do so; lack of time, lack of knowledge, lack of encouragement from managerial level, a lack of counselling tools and embarrassment were given as reasons for not addressing the topic with women (Olsson *et al.* 2011, Wendt *et al.* 2011, Percat & Elmerstig 2017). Furthermore, midwives felt insecure when women deviated from heterosexual norms or when they came from different cultural backgrounds (Percat & Elmerstig 2017). When the culture of an organisation is to ignore sexual health, the next generation of midwives and healthcare professionals are not learning the skills to enquire effectively about sexual health from their experienced peers. The silence of midwives can inadvertently send a message to women that their sexual health does not matter, or that they are unwilling to discuss sexual health issues. Midwives work in the 'messiness' of birth every day, they work with what can be the end result of sexual intercourse, that is, pregnancy and birth. Yet midwives seem to lack the skillset and confidence to counsel women on their postpartum sexual health. Still, women who have been socialised in a culture of silence are expected to raise sexual health with their healthcare professional.

The notion that women's sexual health needs are not being met is not isolated to postpartum women only. Hill *et al.* (2011) determined that survivors of gynaecologic and breast cancers had unmet sexual health information needs. Ussher *et al.* (2013) too found that of 1,901 breast cancer survivors many had sexual health information needs that were not being met by their healthcare professional. The continued silence from healthcare professionals on the topic of women's sexual health and sexuality has the potential to have a detrimental effect on women's overall health and intimate relationships. Women are not being educated about sexual health solutioning. When women do present to healthcare professionals with other birth-related morbidities or following cancer treatments they are not being assessed in a woman-centered and embodied way that includes sexual health. Furthermore, postpartum

consultations with healthcare professionals are baby-focused, minimising the importance of women's postpartum sexual health and further perpetuating the silence.

6.8 Contribution of the study's findings to the expansion of the concept analysis of postpartum sexual health

Findings from the current study have expanded our understanding of the concept of postpartum sexual health as presented in Chapter 2. The four philosophical principles that underpin the principles-based approach to concept analysis are revisited, that is, the epistemological, pragmatic, linguistic and logical principles. The epistemological principle involves determining if the concept of postpartum sexual health has been clearly defined and well differentiated from other concepts. Epistemologically this study contributes to our understanding of the social, psychological and relational dimensions of postpartum sexual health. Psychologically, postpartum sexual health was interwoven with women's view of themselves as mothers and their body image. Relationally, the findings demonstrated the conflict women experienced between the sexual and non-sexual aspects of their body, as well as the feeling of guilty they experienced about changed interest in sexual activity and the challenges of being emotionally close to their partner. Socially, how women adapted to motherhood and women's motivation for engaging in sexual activity after birth contribute to a better understanding of postpartum sexual health.

The pragmatic principle is concerned with the application of the concept within practice. The current study findings provide further evidence of the pragmatically immature nature of the concept. For example, women in the study identified an absence of advice and reassurance from their healthcare professionals regarding their sexual health after birth.

The linguistic principle establishes if there is consistency in use and meaning of postpartum sexual health. Phase 1 of the current study adds little new to the concept from the linguistic principle perspective, insomuch as, commonly measured physical dimensions of sexual health (e.g. dyspareunia, lack of vaginal lubrication and difficulty with orgasm) are measured and reported upon. However, Phase 2 expands the linguistic principle significantly to include sexual satisfaction, relationship satisfaction and effective communication in the couple dyad.

Whether a concept can hold its own boundaries when theoretically integrated with other related concepts is the concern of the logical principle. Logically postpartum sexual health

remains immature. Women spoke about intimacy, sexual desire, touch, motivation for sex and sexual intercourse as conceptual components of postpartum sexual health, all of which could be described as conceptual components of sexuality.

In addition to developing the concept from the philosophical principles, the current study identified a number of antecedents to postpartum sexual health not previously uncovered when analysing the concept. They are: affection within the relationship (i.e. kissing, cuddling, hugging), sleeping in the same bed, planning sexual activity and avoiding extreme tiredness. Staying emotionally connected to one's partner and avoiding being exclusively focused on the baby are also new antecedents to postpartum sexual health. Furthermore, effective communication within the couple's relationship strongly influenced women's experience of their postpartum sexual health.

I anticipate that the contribution of the findings to our understanding of the concept of postpartum sexual health will influence the methodologies and study designs employed in future research on postpartum sexual health.

6.9 Strengths and limitations to study

6.9.1 Strengths

This is the first longitudinal study examining postpartum sexual health during the first year after birth in Ireland. The recruitment of a large sample of nulliparous women in early pregnancy, regular follow-up and a high retention rate of 74% to twelve months postpartum is a strength of this study. Data from hospital records enhances the reliability of information on mode of birth and perineal trauma (these data are recorded by the midwife caring for the woman). The frequency of follow-up, that is, every three months, reduces the likelihood of recall bias as only information on the previous three months to the index survey was sought, and provides reliable data on changes to women's sexual health over time following birth.

The mixed methods research design enabled using both quantitative and qualitative approaches to gain a greater insight into women's postpartum sexual health. The extent of longitudinal survey data collection on a number of sexual health variables at five time points is a strength of this study. There is limited research on women's experience of their sexual health after birth internationally, and very little information on the challenges women experience in

maintaining their intimate relationship and being sexually active with their partner. One of the strengths of this study is the contribution it makes to this area and the identification of strategies and solutions that women and their partners adopted to manage changes in the woman's sexual health.

6.9.2 Limitations

A number of potential limitations have been identified that need to be considered when reading the findings. The study sample is from one maternity unit in Ireland, which is not entirely representative of a national sample. Younger women (under twenty-four years) are poorly represented in this study, as are women who did not attend third level education. Women from marginalised groups, such as, traveller women, women from the Roma community, women in same sex relationships and teenage mothers may have very different experiences of postpartum sexual health than those described in this study and therefore findings may not be generalisable to these women. The influence of culture and possible patriarchal societal norms may significantly influence women from different ethnic and cultural backgrounds experience of their postpartum sexual health.

The sample of women interviewed in Phase 2 were mainly well educated, older, white, Irish, married or in stable relationships therefore the views expressed may not be representative of women from diverse cultural backgrounds. Younger, single women, women in same sex relationships or those who had not attended third level education were poorly represented in the interview sample. This means that findings are potentially biased to the views of older, well educated women in stable relationships who may have greater confidence and communications skills in discussing intimacy and sexual activity.

The survey did not include definitions of concepts such as lack of vaginal lubrication and vaginal tightness, hence they are open to individual interpretation on meaning. The first survey did have a retrospective element, in that women were asked about their sexual health before becoming pregnant or 'in the past twelve months'. This was to gather data on pre-pregnancy sexual health for comparative purposes. However, there may be a risk of recall bias that could impact on the accuracy of data and the prevalence rates of pre-pregnancy sexual health issues, such as dyspareunia.

As I became immersed in my study and began carrying out preliminary descriptive statistics I became aware that some sexual health variables included in Survey 1 were not included in the

postnatal surveys, such as overall satisfaction with sexual life and frequency of sexual intercourse. The variables were of interest as they are frequently reported on in international literature. A decision was made to add these variables to Surveys 4 and 5 (nine and twelve months postpartum). This means that I did not have data for these variables at three and six months postpartum for comparison purposes and to observe the change in prevalence rates over time.

The question on women's perception of their body image was added to all the postnatal surveys. However, women's perception of their body image prior to pregnancy is assessed three months postpartum, therefore there may be an element of recall bias that could affect the accuracy of data. Data on other factors, such as medications (e.g., psychotropic drugs) that may affect interest in sex or other aspects of sexual health such as vaginal dryness (Higgins 2007) were not collected. Also, comprehensive data on a history of sexual violence and/or sexual trauma in childhood or adulthood were not collected. A further limitation is the absence of a question on the sexual orientation of women in my study, thus it was not possible to identify if there was any difference between women in same sex relationships and those in opposite sex relationships.

There is a wide variation in the age of the index baby at time of interview in Phase 2, ranging from 23-35 months old. Consequently, recall bias may have influenced the findings, as women may have developed their solutions and strategies to maintaining intimacy and sexual activity in the early months after birth.

The last data collection point in Phase 1 took place when the index baby was twelve months old. Interviews in Phase 2 took place when the index baby was between 23-35 months after birth. The reader needs to consider the potential impact of data from a wide range of time-points, as variation in the length of time post-partum and the passage of time itself could have influenced women's reported experiences of their sexual health.

6.10 Summary of discussion chapter

The key discussion points for this study have been identified from the integration of findings from Phase 1 and Phase 2 of this study. Many women experience changes to their sexual health after birth. These changes are more pronounced three and six months postpartum but commonly resolved to pre-pregnancy prevalence rates or less twelve months postpartum.

Women's overall satisfaction with their sexual life was not negatively impacted by their experience of sexual health issues. It may be that women include intimacy, affection, emotional closeness and relational satisfaction when considering their satisfaction with their overall sexual lives. Women did not demonstrate health service-seeking behaviour, rather they sought help from other sources, that is, their female friends, family and the internet. This positive active solutioning behaviour that women demonstrated helped women develop strategies and solutions to sexual health issues experienced. However, not all women will have the skills to communicate their sexual health needs effectively, or the skillset to critically appraise all of the information on sexual health available online. The lack of enquiry about sexual health during the frequent healthcare consultations in pregnancy and post birth further perpetuates the silence around women's sexual health and sexuality in society. The final chapter, Chapter 7 outlines the recommendations that have emerged from the findings of this study and concludes this thesis.

Chapter 7 Recommendations and conclusion to thesis

7.1 Introduction

In this final chapter, recommendations for future sexual health policy, clinical practice, education and future research, which have emerged from the findings of this research, are described. A dissemination plan at national and international levels is outlined and a conclusion to this thesis is then presented.

7.2 Recommendations from thesis

7.2.1 Sexual health policy

The National Sexual Health Strategy in Ireland (Department of Health 2015) sets out the main actions to be taken in Ireland during 2015-2016 in order to implement the Strategy. Some of these actions have already been achieved; for example, a Health Service Executive (HSE) foundation programme in sexual health promotion has been developed, evaluated and is established in nine counties in Ireland. However, other actions have not yet been achieved, such as evaluating and revising the Relationship and Sexuality Education (RSE) programmes in post-primary schools. The National Sexual Health Strategy is the first of its kind in Ireland and its publication is a step in the right direction to achieve the vision of positive sexual health and well-being experiences in Ireland. It is, however, predominantly concerned with crisis pregnancy, preventing the spread of sexually transmitted disease and sexual health education in schools. Sexual pleasure and intimacy are mentioned in the strategy only in the context of providing a definition for sexuality. There is a notable absence of a discourse around sexual pleasure (sexual desire, sexual arousal) and no reference to postpartum sexual health or reference to dyspareunia or pain during sexual intercourse.

It is recommended that:

- Future sexual health strategies in Ireland demonstrate a commitment to a wider conceptualisation of sexuality that acknowledges sexuality as a central aspect of being human throughout life encompassing sex, gender identities, sexual orientation, eroticism, pleasure, intimacy and reproduction.
- National and international sexual health strategies incorporate postpartum sexual health, with clearly defined actions, such as routine postpartum sexual health

assessment by the appropriate healthcare professional as well as measureable outcomes on sexual health (e.g. absence of dyspareunia).

- Women (of all ages), postpartum women, and men, including people of trans-gender and those who identify with lesbian, gay, and bi-sexual sexualities should be included in future sexual health strategy working groups, with a view to contributing on the aspects of sexual health that are important and relevant to them.

7.2.2 Incorporating sexual health into antenatal and postnatal care

Findings from this study indicate that there are numerous missed opportunities to open a discussion with women on sexual health and support them with issues relating to sexual health during the trajectory of maternity care.

It is recommended that:

- A sexual health assessment is included during the first antenatal appointment (booking appointment) during the medical, surgical, obstetric and social history taking. This should include an assessment of satisfaction with sexual life to give women an opportunity to discuss any sexual health issues they might be experiencing. Also a question on dyspareunia should be included. This should be incorporated in the Maternal and Newborn Clinical Management System (MN-CMS), a new electronic health record (EHR) for all women attending maternity services in Ireland, which is currently being rolled out on a phased basis, with implementation complete across all nineteen maternity units by the end of 2018.
- A sexual health assessment be included as a routine component of the postpartum assessment prior to discharge from the Mother and Infant Care Scheme (approximately six weeks postpartum). This should include questions on: resumption of sexual activity, pain or discomfort during sexual intercourse and anxiety or apprehension experienced about resuming sexual activity. Additionally, the timing of the final postpartum assessment as part of the Mother and Infant Care scheme should be extended, possibly to three months postpartum. This could enable women to assess more accurately how they are transitioning to motherhood. Women may also have resumed sexual activity and have a clearer sense about how sexual intercourse feels and the presence of any sexual health issues that they are concerned about.
- A clear referral pathway be introduced for women who indicate that they are experiencing persistent sexual health issues that are causing them distress and/or

anxiety. This would most likely be from their General Practitioner (GP) to the appropriate healthcare professional.

- Parenthood education classes should include a module on ‘adapting/transitioning to motherhood’. Included in this should be a session on sexuality during pregnancy and after birth. It should include discussion on commonly reported postpartum sexual health issues and possible influencing factors for developing sexual health issues. It should also address strategies and solutions women and couples developed to overcome and/or adapt to postpartum sexual health issues experienced. The verbal information provided on sexuality during pregnancy and after birth should be reinforced with written information in the form of an information leaflet, for example, ‘Sexual health in pregnancy and post birth’. It should include addresses of evidence-based websites for further information and contact details of appropriate healthcare professionals if sexual health problems are experienced.
- Breastfeeding classes should incorporate a module on breastfeeding and sexual activity. This should include information on the association between breastfeeding and vaginal dryness, and the potential use of water-based lubricants. It should also include a discussion on issues relating to the dual role of the breasts and women’s experience of being ‘*all touched out*’.
- The HSE information booklet that is given to all women at their booking visit promoting and supporting breastfeeding should include a section on the impact of breastfeeding on sexual activity, as well as information on how to overcome challenges experienced.
- Women’s health and well-being should be given equal attention to that of the baby. This can be achieved by verbalising the importance of maternal well-being and by allocating at least half of the scheduled consultation time to maternal well-being, particularly in the postnatal period.
- The role of the Public Health Nurse (PHN) should be expanded to include assessment of maternal well-being up to one year after birth. This might be achieved through a more integrated and coordinated service between PHNs and community midwives as outlined in the National Maternity Strategy (Department of Health 2016). Maternal well-being assessments should include a discussion on women’s sexual relationship and their experience of sexual health issues.

7.2.3 Education on postpartum sexual health among professionals

Few women spoke to a healthcare professional regarding their experience of the sexual health issues after birth as demonstrated from the survey findings in this study. The qualitative phase confirmed that women were not asked about their sexual health during pregnancy or after birth. As part of the recommendations that sexual health assessment be a component of history taking during the booking visit and postnatal consultations, healthcare professionals need competence to address women's postpartum sexual health.

It is recommended that:

- Midwifery students' education programmes should include a module on sexual health during pregnancy and postpartum. This should include effective communication on how to open a conversation on the sensitive, personal and possibly the embarrassing topic of sexual health. It should prepare the midwifery student to discuss sexual health with women in same-sex relationships and women from different cultural backgrounds. Videos and role play could be used to demonstrate effective communication.
- Ongoing education and training be offered to registered midwives, physiotherapists, GPs, PHNs and obstetricians about the potential for changes to sexual health postpartum. Included in this would be guidance on what constitutes a sexual health assessment. Exemplars of good communication skills when preforming sexual health assessments and providing postpartum sexual health advice and support should be included in continuous professional education and training. In addition, healthcare professionals should be made aware of the antecedents to postpartum sexual health in order to provide effective support and advice to women.
- Healthcare professionals responsible for women's health in Ireland (e.g. GPs, nurses, midwives, obstetricians, gynaecologists, physiotherapists, public health doctors and allied health professionals) should incorporate a sexual health assessment as part of routine assessment. Viewing women's health from a holistic perspective rather than looking at morbidities in isolation is recommended.

7.2.4 Research

The findings from the current study and the discussion have identified several areas that require further research.

It is recommended that:

- Future research on women's postpartum sexual health is inclusive of women in same sex relationships. This would determine if women in same sex relationships experience the same types of sexual health issues after birth, and if so, what type of help-seeking behaviour they demonstrate.
- Future research examining women's postpartum sexual health should incorporate biophysical, psychological, relational and social aspects of postpartum sexual health.
- Measuring dyspareunia and other sexual health issues should clearly identify if the experience was a once off experience or recurring issue and whether it caused distress to the woman. This, along with prospective data collection, should provide accurate prevalence rates of dyspareunia and sexual health issues.
- Furthermore, it should include the collection of data on other factors, such as medications (e.g. psychotropic drugs) that may affect sexual activity. Data on the experience of previous sexual trauma or sexual violence should also be included.
- Partner's experience of sexual health after birth is addressed in future research. Mismatched sexual desire, the impact of body image on intimacy and sexual activity (i.e. the mothers' perception of her body image) and communicating about sex all need to be explored from the partner's perspective. This might include large scale studies with partners and/or research with couples about their experience of sexual health after birth.
- Research is needed to address healthcare professionals' needs in relation to sexual health assessment and providing sexual health advice and support to pregnant and postpartum women. This might include large scale studies with a sample of: midwives, obstetricians, gynaecologists, GPs, PHNs, GP practice nurses and women's health physiotherapists.
- Research is required to assess the feasibility of an extension of the Mother and Infant Care Scheme to include a three months' postpartum assessment. This might include piloting an extended Scheme in identified Community Care areas for six months followed by an extensive evaluation.

- Measurement tools used to measure women's postpartum sexual health are developed and validated for use in pregnant and postpartum women. Additionally, measurement tools take a more embodied view of women's sexual health to include the physical but also the relational, social and psychological aspects of postpartum sexual health.
- Evaluation of sexuality modules incorporated in midwifery education programmes should take place to assess their effectiveness. Similarly, ongoing professional education courses incorporating sexual health should be evaluated.

7.3 Dissemination plan

Dissemination of findings from this study has commenced and is ongoing. To date I have been successful in having two papers published in peer-reviewed journals (O'Malley *et al.* 2015, O'Malley *et al.* 2018) and have presented at nine international conferences (Appendix 28). I have made contributions to the national sexual health newsletters published by the HSE and will continue to do so (O'Malley 2015).

Future dissemination includes:

- Five more manuscripts:
    - Paper titled: The impact of perception of body image on women's intimate relationship after birth: a mixed methods study. Planned submission in August 2018 to the Journal of Clinical Nursing.
    - Paper title: Exploring women's help-seeking behaviour for postpartum sexual health issues: a mixed methods study. Planned submission in September 2018 to Birth.
    - Paper title: How midwives can support women's sexual health during pregnancy and after birth. Planned submission in October 2018 to the Practising Midwife.
    - Paper title: Women's solutioning and strategising in relation to their postpartum sexual health: a qualitative descriptive study. Planned submission November 2018 to Midwifery.
    - Paper title: Methodological adaptations in conducting a principle-based concept analysis. Planned submission in November 2018 to the Journal of Advanced Nursing.

- Distributing the findings to healthcare professionals involved in maternity care, including: midwives, GPs, PHNs, physiotherapists and other allied healthcare professionals in Ireland and internationally. This will be achieved through professional associations (their publications) and oral presentations at Grand rounds and multidisciplinary meetings. Posters and information leaflets on postpartum sexual health and strategies used by women to manage challenges will be developed and provided for GP surgeries and community healthcare centres.
- Continued presentation at national and international conferences, such as the International Confederation of Midwives Triennial Conference and the All-Ireland Midwifery Conference.
- Dissemination of findings to the women who participated in this study and other women through the MAMMI study website www.mammi.ie and quarterly newsletters.
- Discussing findings at women's groups meetings, such as the National Women's Council of Ireland meetings nationally. Sharing findings with mother and baby groups, for example, La Leche League of Ireland. Also a website (www.mammi.ie) link to study findings will be offered to administrators of rollercoaster.ie
- Presentations to midwifery students in universities in Ireland.
- Publishing findings in women's magazines, such as Image magazine, Her.ie and Irish Country Life.
- Providing posters and information leaflets to college (e.g. universities and further education colleges) students unions and student health centres on college campuses. Links to www.mammi.ie on student support and health centre websites.

7.4 Conclusion

The first year after the birth of the first baby is a period of transition when women experience physical, psychological, emotional and relational change. Women's intimate relationship is a part of their life that experiences significant change after birth. The findings from this prospective cohort study of nulliparous women demonstrate that many women are satisfied with their overall sexual life one year after the birth of their first baby, despite experiencing considerable sexual health issues, namely: dyspareunia, a lack of vaginal lubrication and a loss of interest in sex. Pre-existing dyspareunia, OASI, breastfeeding and dissatisfaction with one's body image were identified as possible risk factors for experiencing sexual health issues six and twelve months after birth.

Women were unprepared for the changes to their intimate relationship but they became positive agents in finding solutions for their sexual health issues. Women talked to other women and searched online to develop strategies to manage sexual health issues experienced. Effective verbal and non-verbal communication with their partner was seen as the most effective way to maintain their intimate relationship. Being able to communicate effectively with their partner was associated with reducing feelings of guilt and failure that women experienced as a result of their reduced interest in sex and sexual desire and the high expectations they put on themselves.

There was strong evidence from the current study that healthcare professionals lost several opportunities during the trajectory of antenatal and postnatal care to prepare and advise women about changes to their sexual health after birth. Healthcare professionals' silence on postpartum sexual health and focus on the baby is sending a message that women's sexual health does not matter and is further perpetuating the silence that surrounds women's sexual health in society. I have made numerous recommendations for future sexual health policy, clinical practice, education and research. These I believe help take women's sexual health out of the shadows in Irish society, will help prepare women for changes to their sexual health and assist women manage and adapt to changes experienced in their intimate relationship after the birth of their baby.

7.5 Personal reflection

The process of beginning this PhD thesis and seeing it to completion has been a journey of self-discovery. At the start of this process I had an 'interest' in women's sexual health after birth. I am now passionate about women's sexual health and how we as a society engage in discourse about sex and sexuality.

The practice of carrying out a mixed methods study was more challenging than I anticipated. The simplistic view of doing a quantitative piece followed by qualitative piece was completely at odds with the depth of understanding required to philosophically justify the use of two seemingly opposing approaches. Utilising a mixed methods approach meant that I had to familiarise myself with methods from both quantitative and qualitative methodologies and employ a study design that justified and clearly benefited from using both quantitative and qualitative methods.

I was unprepared for the length of time that quantitative data entry, data cleaning and data preparation would take. I had not taken account of this in my time management projections. Furthermore, I now know what it means to be 'immersed' in qualitative data analysis. I had used the term loosely in the past. However, after my experience of collecting and analysing interview data simultaneously I believe I have a much better understanding of what that immersion actually feels like. The six months of data collection and data analysis were intense and rewarding at the same time. The reward was knowing that rich detailed data were being collected from women.

Finally, I would again like to thank the women who took time out of their busy lives to complete the surveys and those women who shared their narrative about the most private part of their lives with me.

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Appendix 1: Search strategy for literature review and concept analysis

An initial scoping search of the term 'postpartum sexual health' to carry out a concept analysis was carried out in 2013 and provided between 2000 and 3000 citations across a variety of electronic databases. In browsing these titles and abstracts, it appeared that many key seminal studies, that I was aware of, were not being captured. This indicated a necessity to develop a detailed search strategy using carefully chosen key words so that I could be assured that all of the relevant literature would be identified. From previous reading and from my familiarity with the literature the following keywords were selected to guide the search: *'sexual health', 'sexual function', 'sexual behaviour', 'sexual problems', 'dyspareunia', 'sexual satisfaction', 'sexual activity', 'sexuality', 'sexual desire', 'sexual arousal'* and *'sexual dysfunction'*. As the population of interest is postpartum women, key words such as: *'female', 'women', 'postnatal', 'after childbirth'* and *'postpartum'* were also added to the search, combining these with the 'sexual' terms string using the Boolean operand, 'AND'. Within string terms were combined using the operand 'OR' as appropriate. Using these key words, the electronic databases of Pubmed (1988-2013), CINAHL (1980-2013), Maternity and Infant Care (1985-2013), Psych Info (1980-2013), Web of Science (1980-2013), EMBASE (1974-2013), SCOPUS (1980-2013) and Social Science Index (1984-2013) were searched.

This electronic search yielded 470 citations from a wide variety of disciplines: midwifery/nursing, obstetrics and gynaecology, urology, psychology, sociology, medical, feminist, sexology, historical and cultural. These citations were screened based on title, abstract and full text where deemed necessary. This resulted in 381 papers being excluded as either duplicate publications or as irrelevant to the concept of postpartum sexual health. Additionally, reference lists from included papers were scrutinised for relevant papers not captured in the electronic search (n=2). To complete the search key textbooks identified in the literature as relevant or recommended through personal communication with colleagues were retrieved and reviewed (n=3). Due to the unavailability of translation services all searches were limited to English language publications. Furthermore, literature on child spacing, HIV, family planning and contraception were excluded as this literature was chiefly concerned with family planning issues and maternal mortality and morbidity in developing countries and was therefore not appropriate to postpartum sexual health in the context for which I was concerned.

The final search and selection, which was performed in October 2013, resulting in ninety-one articles and three textbooks for review and possible inclusion in the concept analysis of postpartum sexual health.

Original yield	470
Removal of duplicates (-116)	354
Removal by title (-184)	170
Removal by abstract (-81)	89
Secondary methods (+5)	94
Total for inclusion in analysis	**94**

This literature search described above was re-run in November 2017 to include published studies on postpartum sexual health during 2013-2017. This yielded a further twenty-six relevant papers. In March 2018 a final re-run of the literature search was carried out and three new papers were identified for inclusion. A total of 123 articles were included in this literature review.

Up to this point, papers yielded by the search were very specific to postpartum sexual health only. In order to give some context and background to postpartum sexual health and for a comprehensive review of the literature, I needed to broaden my reading beyond postpartum sexual health. This included reading around the closely related concepts of: sexuality, sexual and reproductive health, women's sexual health and women's sexual dysfunction. This was achieved by carrying out a methodical search of the World Health Organisation (WHO) website in particular the Reproductive Health Library, the United Nations website and the Department of Health (Ireland) website for relevant reports and policy documents. Reference lists of the included reports and papers were further examined for articles that could be relevant to my broader reading. This step of the search process identified a number of papers critiquing Masters and Johnson's sexual response cycle, Basson's intimacy-based model of female sexual response and the DSM-5 new classification of female sexual dysfunction. Conference proceedings from the International Confederation of Midwives 2014, 2017 and the European Federation of Sexology conference proceedings were searched for relevant oral or poster presentations.

Appendix 2: Summary table of sexual health outcomes measured by the studies included in the literature review

Measurement tool	Outcomes measured*	Studies
Female Sexual Function Index (FSFI)	Sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and dyspareunia	Hosseini *et al.* (2012), Chang *et al.* (2011), Baud *et al.* (2011), Chivers *et al.* (2011), Doumouchtsis *et al.* (2011), Chang *et al.* (2010), Citak *et al.* (2010), Safarinejad *et al.* (2009), Klein *et al.* (2009), Pauls *et al.* (2008), Baksu *et al.* (2007), , Khajehei *et al.* (2015), Yıldız (2015), Lurie *et al.* (2013), Leeman *et al.* (2016), Lagaert *et al.* (2017), De Souza *et al.* (2015), Leeman *et al.* (2016)
Arizona Sexual Experiences Scale ASEX	Sexual desire, sexual arousal, vaginal lubrication and orgasm	Acele & Karaçam (2012)
Intimate Relationship Scale	Frequency of sex, fatigue interferes with sexual intercourse, sexual satisfaction, sexual desire, partner initiates sex, comfort in talking about sex and who initiate sexual intercourse	Rogers *et al.* (2009)
Golombock-Rust Inventory of Sexual Satisfaction (GRISS)	Sexual desire, sexual arousal, orgasm, dyspareunia and sexual satisfaction	Dean *et al.* (2008), Gungor *et al.* (2007)
Maudsley Marital Questionnaire	Sexual satisfaction	van Brummen *et al.* (2006)
Pelvic Floor Symptom Bother Questionnaire	Dyspareunia	Lipschuetz *et al.* (2015)
International Consultation on Incontinence Questionnaire	Dyspareunia, sexual desire. Authors added two questions: on anorgasmia, and overall judgement of sexual life	Serati *et al.* (2008)
Sexual Desire Inventory	13 Likert-type questions on sexual desire	Hipp *et al.* (2012)
Sexual Desire Inventory, Global Measure of Sexual Satisfaction, Couple Satisfaction Index		Rosen *et al.* (2017a), Rosen *et al.* (2017b)
Sexual Health Outcomes in Women Questionnaire	Sexual satisfaction, orgasm, desire and dyspareunia	Yee *et al.* (2013)
	Perineal pain, dyspareunia and sexual satisfaction	Labrecque *et al.* (2000)

	Sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction and dyspareunia	Rathfisch *et al.* (2010)
	Loss of vaginal lubrication, lack of interest in sex, dyspareunia, difficulty reaching orgasm, vaginal tightness, vaginal looseness, bleeding and/or irritation after sex	McDonald *et al.* (2015), McDonald & Brown (2013), McDonald *et al.* (2016)
	Vaginal looseness, vaginal tightness, dyspareunia, vaginal lubrication, lack of sensation during sex and leaking of flatus, urine or faeces during sex	Williams *et al.* (2007)
	Dyspareunia and orgasmic function	Connolly *et al.* (2005)
	Loss of vaginal lubrication, lack of sexual desire, dyspareunia, difficulty reaching orgasm, vaginal tightness, vaginal looseness, bleeding and/or irritation after sex	Barrett *et al.* (2000), Barrett *et al.* (2005), Morof *et al.* (2003)
	Timing of resuming sexual intercourse, sexual desire and decline in sexual life	Faisal-Cury *et al.* (2015)
	Dyspareunia, sexual desire, vaginal tightness and vaginal looseness	Fodstad *et al.* (2016)
	Timing of resumption of sexual intercourse	Radestad *et al.* (2008)
	Timing of sexual intercourse and dyspareunia	Marsh *et al.* (2011)
	Sexual interest, sexual desire, frequency of sexual intercourse	Moel *et al.* (2010)
	Timing of resumption of sexual intercourse, dyspareunia, sexual sensation and sexual satisfaction	Signorello *et al.* (2001)
	Sexual Desire, frequency of sexual intercourse and partners attention to sexual needs	Hansson & Ahlborg (2012)
	Dyspareunia	Schytt *et al.* (2005), Buhling *et al.* (2006), Mous *et al.* (2008), Palm *et al.* (2013), Macleod (2013)

*Only sexual health outcomes are listed, other outcomes relating to pelvic floor symptoms or quality of life are not included as they are not the focus of this study.

Appendix 3: Data Identification Form Version 1 with example of data extraction

Example of data extraction from: Williams, A.H.-M., S.; Hicks, C. (2007) The prevalence of enduring postnatal perineal morbidity and its relationship to perineal trauma. *Midwifery,* **23**(4), 392-403.

Retrieval details		Notes
Primary Retrieval	Yes	
Ancestry Retrieval		
Discipline	Midwifery	
Primary research	Yes	
Text book		

Keywords in title, abstract or provided as keywords (postpartum…)

	Yes/No	Notes
Sexual health		
Sexuality		
Sexual function		
Sexual behaviour		
Sexual dysfunction		
Dyspareunia	Yes	In abstract
Other term		*Sexual morbidity* in abstract

Principles

	Yes	No	Page #
Epistemological			
Is the concept clearly defined?	X		394
Is it well differentiated from other concepts?	X		394 395
Pragmatic			
Is it useful for clinical practice?	X		401, 402
Is it useful for research?		X	Very poor response rate, no 3rd &4th degree tears
Linguistic			
Is the concept used consistently and appropriately within the context?	X		throughout
Quantitative measures	X		Box 1, table 2, 3
Qualitative themes		X	
Logical			
Does the concept hold its boundaries?	X		Other morbidities
Has it been theoretically integrated with other concepts?	X		Other morbidities 394

Has the concept been appropriately operationalized?		X	
Have the key characteristics of the concept been identified?	X		394, Box 1, table 2, 3
Are key characteristics consistent?	X		Box 1, table 2, 3
What are the antecedents to the concept?	X		SVD, instrumental birth, perineal trauma, intact perineum
What are the consequences/outcomes?	X		Quality of life 402

Appendix 4: Data Identification Form Version 2

	Retrieval details					Keyword provided in title, abstract or as keywords (postpartum…)							Epistemological Principle	
Reference	Primary Retrieval	Ancestry Retrieval	Discipline	Primary Research	Textbook	Sexual health	Sexuality	Sexual function	Sexual behaviour	Sexual dysfunction	Dyspareunia	Other term	Is the concept clearly defined?	Is it well differentiated from other concepts?

Pragmatic Principle			**Linguistic Principle**			**Logical Principle**		**Has the concept been appropriately operationalized?**	**Have the key characteristics of the concept been identified?**	**Are key characteristics consistent?**
Is it useful for clinical practice?	Is it useful for research?	Is the concept used consistently and appropriately within the context?	Is the concept used consistently and appropriately within the context?	Quant measures	Qual measures	Does the concept hold its boundaries?	Has it been theoretically integrated with other concepts?			

What are the antecedents to the concept?	**What are the consequences/outcomes?**

Appendix 5: Data Identification Form Final Version

	Retrieval details			Keyword provided in title, abstract or as keywords (postpartum…)							Epistemological Principle	
Reference	Primary Retrieval	Ancestry Retrieval	Primary Research	Sexual health	Sexuality	Sexual function	Sexual behaviour	Sexual dysfunction	Dyspareunia	Other term	Is the concept clearly defined?	Is it well differentiated from other concepts?

Pragmatic Principle		**Linguistic Principle**			**Logical Principle**		**Has the concept been appropriately operationalized?**	**Have the key characteristics of the concept been identified?**	**Are key characteristics consistent?**
Is it useful for clinical practice?	Is it useful for research?	Is the concept used consistently and appropriately within the context?	Quant measures	Qual measures	Does the concept hold its boundaries?	Has it been theoretically integrated with other concepts?			

What are the antecedents to the concept?	**What are the consequences/outcomes?**	**Other concepts mentioned**

Appendix 6: Notes kept during data extraction

Excerpt 1

1970s – 1980s

Older papers seems to use term 'sexuality' and describes the physiological changes experienced and why – directly relating to Master and Johnson.

Dated language – for example, women and their sexual tension.

There seems to be a trend in this earlier work for women to resume sexual intercourse earlier that the studies from 2000 – onwards. Over half had resumed sexual intercourse before 6 weeks (in one of the studies women had resumed at 4.4 weeks on average).

The **nursing & obstetric** journals interested in timing of resumption of sexual intercourse, pain, influence of BF, very physiological stuff. Many referrals to M & J work. Some mention of desire and influence of fatigue.

2 studies pulled for CA, 12 discarded.

Family planning and **sociological** journals seem to be focused on contraception, abstinence, amenorrhoea in developing countries. They seem to be interested in changing abstinence practices and the influence of education on changing practices – of course the impact of not using contraceptives appropriately and the consequences of that. Child spacing, Fertility, BF.

A thought – about this abstinence, who introduced it? Traditionally it was up to 18-24 months. Did the Church have anything to do with it? (note they do say that traditional beliefs included believing that the baby ingested the semen from the breast milk and it was bad / poisoned the baby.

Excerpt 2

2001 – 2005

It's really taking off now, several reviews not include for CA (they don't try and explain or define postpartum sexual health.

2001 – Language still refers to sexuality for the most part. The usual outcomes being measured, but Signorello has brought in postpartum sexual functioning (sexual sensation, sexual satisfaction, likelihood of achieving orgasm). Von Sydow reports on sexual activities between couples in pregnancy and 6/12 postpartum – good effort to describe sexuality (but general sexuality rather than postpartum).

2002 – Sexual problems, sexuality, sexual health – all terms used. Lit from obstetric, midwifery and sexology disciplines. Usual outcomes measures, but De Judicibus gets into the relationships issues, desire, satisfaction, behaviour.

2003 – Some HIV/contraception and child spacing in developing countries removed. Traditional Thai postpartum practices (incl abstinence) removed. Really good review on BF and sexual functioning kept in for moment.

2004 – Contraception, sexual function as a measure of PN morbidity. No real discussion on sexual health. Hicks SR included here, it's not a great SR but 'Sexual Functioning' and the usual measures examined.

2005 – at last some qualitative stduies. One of interest women's experiences of 3rd degree tear (sexual issues emerged as a theme). Olsson's focus groups on sexual life after birth – body image, changed sexual patterns, discordance with partner and the need to reassurance from partner and health professionals. Connolly has made a big deal about orgasm as a measure of sexual function. Ahlborg uses couples and refers to intimate relationship.

23 primary studies pulled from obstetric, midwifery, nursing, psychology and sexology disciplines. 1 lit review kept in as it's really comprehensive – makes an effort to discuss 'sexual functioning' after birth. But does tend to go back to problems being exclusively related to desire, arousal and orgasm. 1 SR also included – 11 discarded

Is the focus always on sexual problems??

Is being in a relationship an antecedent?

How long is postpartum period – do I include long term follow up?

Presence of pain during SI does not necessitate dissatisfaction with life or even SI

Appendix 7: Summary of sections in the MAMMI survey

Survey 1 (antenatal) A. Your general health and well-being B. Your health before pregnancy C. Your health since the start of pregnancy D. Your emotional health and well-being now E. About you and your household
Survey 2 (three months postnatal) A. Questions about you and your baby B. Your labour and baby's birth C. Life with a new baby D. Your health since the birth of your baby E. Sex after childbirth F. Your emotional health and well-being now G. Contacts with health services H. About you and your household I. You and your relationships
Survey 3 (six months postnatal) A. Questions about you, your baby and contact with the health services B. Life with a new baby C. Your health over the past three months D. Sex after childbirth E. Your emotional health and well-being now F. About you and your household G. About you and your relationships
Survey 4 (nine months postnatal) A. Questions about you, your baby and contact with the health services B. Life with a new baby C. Your health over the past three months D. Sex after childbirth E. Your emotional health and well-being now F. About you and your household G. About you and your relationships
Survey 5 (twelve months postnatal) A. Questions about you, your baby and contact with the health services B. Life with a twelve month baby C. Your health over the past three months D. Sex after childbirth E. Your emotional health and well-being now F. About you and your household G. About you and your relationships

Appendix 8: Sample Survey (Survey 4 – Nine months postpartum)

Study No

Survey Booklet Four: 9 Months Postnatal

4

Thank you for taking the time to complete this survey. It will take you about **30-45 minutes** to complete it and your answers are **confidential**. If you have any questions about any part of this survey, or need help answering any of the questions, please feel free to call us **on 087 1956441.**

The MAMMI study has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do not wish to complete this or receive future surveys ☐

TRINITY COLLEGE DUBLIN
COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH
THE UNIVERSITY OF DUBLIN

Contact: MAMMI Research Team (Deirdre Daly, Deirdre O Malley, Francesca Wuytack, Sunita Panda and Jamile Marchi)
Tel: 087 1956441
E-mail: contact@mammi.ie

Structure of the MAMMI Survey

The **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland (MAMMI) survey is in five (5) parts: (1) antenatal; (2) 3 months after the birth; (3) 6 months after the birth; (4) 9 months after the birth and (5) 12 months after the birth.

This is the FOURTH part (4) of the survey. It is about your health now, 9 months postnatally (after the birth). It has eight (8) sections, numbered A through to H:

A questions about you, your baby and contact with the health services;

B life with a new baby;

C your health over the past THREE months;

D sex after childbirth;

E your emotional health and well-being now;

F about you and your household;

G about you and your relationships

H comments on the survey.

Please note, there is space after Section H for any comments you might like to make on the survey.

How to fill in the Survey

Most of the questions can be answered by putting a tick in the box next to the answer that best applies to you. For example:

Has tiredness been a problem for you in the PAST month?

Yes ☑

No ☐

A few questions may ask you to fill in a number in a box. For example:

What is your date of birth?

Day /Month / Year

3 0 / 0 4 / 1 9 8 0

This filled-in sample represents a date of birth of 30th April 1980

Section A: This section is about you, your baby and contact with health services

These questions are about you, your baby and contact with health services. If you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them. However, if you have experienced any of the symptoms or issues asked about, it would help us to understand them and it might help other women to know they are not alone in their experiences when the findings are published. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify you or **any** individual woman.

A1 What is today's date?

☐☐ / ☐☐ / ☐☐☐☐

d d *m m* *y y y y*

A1a You may be pregnant now or have become pregnant since the birth of your first baby. Please tick ONE response below.

I have not been pregnant since my first baby's birth ☐ 1

I am pregnant now ☐ 2

I was pregnant but I had a miscarriage ☐ 3

I was pregnant but I had an abortion ☐ 4

Please answer this survey in relation to your health and wellbeing AFTER the birth of your first baby. If you were pregnant or are pregnant now, you can add additional comments about your current or last pregnancy at the end of the survey if you wish.

A2 What do you weigh now without clothes or shoes?

☐☐☐ kgs OR ☐☐ stones and ☐☐ pounds

A3 In the past THREE MONTHS, how many times have you visited a local doctor or GP
(Please do NOT include visits to a specialist.)

a. About your health?		**b. About your baby's health?**	
Never	☐ 1	Never	☐ 1
Once	☐ 2	Once	☐ 2
Twice	☐ 3	Twice	☐ 3
3 times	☐ 4	3 times	☐ 4
4 times	☐ 5	4 times	☐ 5
5-6 times	☐ 6	5-6 times	☐ 6
7 or more times	☐ 7	7 or more times	☐ 7

Please comment if you wish ____

____

____

____

c. If you HAVE visited a doctor or GP more than once in the past THREE MONTHS

	Always	**Mostly**	**Sometimes**	**Rarely/ Never**
a. Did you go to the same place for each visit	☐ 1	☐ 2	☐ 3	☐ 4
b. Did you see the same doctor on each occasion?	☐ 1	☐ 2	☐ 3	☐ 4

c. If you **did not** see the same doctor on each occasion, was this your own personal choice? **Yes** ☐ 1 **No** ☐ 2

A4 In the past THREE MONTHS, has any of the following happened to you?
(Please tick ONE response on EACH line.)

	Yes	No	Not sure
a. D & C *(dilatation and curettage)*	☐ 1	☐ 2	☐ 3
b. Wound breakdown – perineal tear or episiotomy	☐ 1	☐ 2	☐ 3
c. Wound breakdown – caesarean section	☐ 1	☐ 2	☐ 3
d. Repeat repair of perineal tear or episiotomy	☐ 1	☐ 2	☐ 3
e. Repeat repair of caesarean section wound	☐ 1	☐ 2	☐ 3

A5 In the past THREE MONTHS, how many times have you visited a hospital emergency department

a. About your health?

- Never ☐ 1
- Once ☐ 2
- Twice ☐ 3
- 3 times ☐ 4
- 4 times ☐ 5
- 5-6 times ☐ 6
- 7 or more times ☐ 7

b. About your baby's health?

- Never ☐ 1
- Once ☐ 2
- Twice ☐ 3
- 3 times ☐ 4
- 4 times ☐ 5
- 5-6 times ☐ 6
- 7 or more times ☐ 7

Please give reasons if you wish ____

____

____

____

A6 In the past THREE MONTHS, how many times have you or your baby been ADMITTED to hospital?

a. You?			**b. Your baby?**		
Never	☐	1	Never	☐	1
Once	☐	2	Once	☐	2
Twice	☐	3	Twice	☐	3
3 times	☐	4	3 times	☐	4
4 times	☐	5	4 times	☐	5
5-6 times	☐	6	5-6 times	☐	6
7 or more times	☐	7	7 or more times	☐	7

Please give reasons if you wish ____

____

____

____

A7 If YOU were admitted to hospital in the past three months:

a. How many nights did you spend in the hospital?

First admission	**Second admission**	**Third admission**
☐☐ nights 1	☐☐ nights 2	☐☐ nights 3

b. Please describe the reason(s) for YOUR admission(s)? *(for example, urinary infection)*

____

____

____

____

A8 If YOUR BABY WAS admitted to hospital in the past THREE MONTHS:

a. How many nights did YOUR BABY spend in the hospital?

First admission	**Second admission**	**Third admission**
☐☐ nights 1	☐☐ nights 2	☐☐ nights 3

b. Please describe the reason(s) for YOUR BABY'S admission(s)? *(for example, breathing difficulties, vomiting, diarrhoea, constipation etc.)*

____

____

____

____

A9 In the past THREE MONTHS, when you went to the doctor did you feel able to talk about things that were troubling you concerning <u>your own health and well-being</u>? *(Please tick ALL statements with which you agree. Leave the statements that you do not agree with blank.)*

a. Yes, my doctor makes it easy for me to talk about anything that is concerning me ☐ 1

b. Yes, but he/she is often busy and doesn't seem to have time to listen ☐ 2

c. Yes, I can talk to my doctor and he/she is very supportive and reassuring ☐ 3

d. I can talk about some issues, but there are other things I do not feel comfortable talking about with my GP ☐ 4

e. There's no point in talking to the doctor about my health because he/she cannot fix any of my problems ☐ 5

f. No, I go to see the doctor about my baby not myself ☐ 6

g. I don't talk to my doctor because I am worried he/she will think I am not coping ☐ 7

h. I don't talk to the doctor because I am concerned he/she might want me to do something that will make the situation worse ☐ 8

i. There are some issues I don't talk about because I am concerned the doctor might tell someone else ☐ 9

A10 In the past THREE MONTHS, has your local doctor or GP asked you directly whether or not you are experiencing any of the following? *(please tick ONE response on EACH line.)*

	Yes	No	Not sure
a. Tiredness or exhaustion	☐ 1	☐ 2	☐ 3
b. Leakage or involuntary loss of urine	☐ 1	☐ 2	☐ 3
c. Leakage or involuntary loss of bowel motion	☐ 1	☐ 2	☐ 3
d. Perineal pain	☐ 1	☐ 2	☐ 3
e. Sexual problems	☐ 1	☐ 2	☐ 3
f. Haemorrhoids	☐ 1	☐ 2	☐ 3
g. Feeling depressed or low	☐ 1	☐ 2	☐ 3
h. Relationship problems	☐ 1	☐ 2	☐ 3

A11 In the past THREE MONTHS, how many times have you visited OR been visited at home by a Public Health Nurse

Never ☐ 1 *(Please go to A14)*

Once ☐ 2

Twice ☐ 3

3 times ☐ 4

4 times ☐ 5

5-6 times ☐ 6

7 or more times ☐ 7

A12 Are you able to talk to your Public Health Nurse about things that are troubling you concerning <u>your own health and well-being</u>? *(Please tick ALL statements with which you agree. Leave the statements that you do not agree with blank.)*

a. Yes, she/he makes it easy for me to talk about anything that is concerning me ☐ 1

b. Yes, but she/he is often busy and doesn't seem to have time to listen ☐ 2

c. Yes, I can talk to her/him and she/he is very supportive and reassuring ☐ 3

d. I can talk to her/him about some issues, but there are other things I do not feel comfortable talking about ☐ 4

e. There's no point in talking to her/him about my health because she/he cannot fix any of my problems ☐ 5

f. No, I go to see her/him about my baby not myself ☐ 6

g. I don't talk to her/him because I am worried she/he will think I am not coping ☐ 7

h. I don't talk to her/him because I am concerned she/he might want me to do something that will make the situation worse ☐ 8

i. There are some issues I don't talk about because I am concerned she/he might tell someone else ☐ 9

A13 In the past THREE MONTHS, has your public health nurse asked you directly whether or not you are experiencing any of the following? *(Please tick ONE response on each line.)*

	Yes	No	Not sure
a. Tiredness or exhaustion	☐ 1	☐ 2	☐ 3
b. Leakage or involuntary loss of urine	☐ 1	☐ 2	☐ 3
c. Leakage or involuntary loss of bowel motion	☐ 1	☐ 2	☐ 3
d. Perineal pain	☐ 1	☐ 2	☐ 3
e. Sexual problems	☐ 1	☐ 2	☐ 3
f. Haemorrhoids	☐ 1	☐ 2	☐ 3
g. Feeling depressed or low	☐ 1	☐ 2	☐ 3
h. Relationship problems	☐ 1	☐ 2	☐ 3

A14. In the PAST THREE MONTHS, has any OTHER health professional (other than your doctor/GP or Public Health Nurse) asked you directly about any of these issues?

	Yes	No	Not sure
a. Tiredness or exhaustion	☐ 1	☐ 2	☐ 3
b. Leakage or involuntary loss of urine	☐ 1	☐ 2	☐ 3
c. Leakage or involuntary loss of bowel motion	☐ 1	☐ 2	☐ 3
d. Perineal pain	☐ 1	☐ 2	☐ 3
e. Sexual problems	☐ 1	☐ 2	☐ 3
f. Haemorrhoids	☐ 1	☐ 2	☐ 3
g. Feeling depressed or low	☐ 1	☐ 2	☐ 3
h. Relationship problems	☐ 1	☐ 2	☐ 3

If yes, please identify the type of health professional i.e. practice nurse, social worker etc.

____

____

____

____

Section B: Life with a new baby

The next few questions are about your life with a new baby. If you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them. However, if you have experienced any of the symptoms or issues asked about, it would help us to understand them and it might help other women to know they are not alone in their experiences when the findings are published. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify **you** or **any** individual

B1 Looking back over the past THREE MONTHS at home with your new baby, how would you describe your own health at that time? Did you feel:

Extremely well ☐ 1

Very well ☐ 2

OK ☐ 3

Not very well ☐ 4

Extremely unwell ☐ 5

B2 How confident did you feel about looking after your baby over the past THREE MONTHS at home?

Very confident ☐ 1

Fairly confident ☐ 2

Mixed ☐ 3

Fairly anxious ☐ 4

Not confident ☐ 5

B3 a Did your baby cry a lot in the past THREE MONTHS?

Yes ☐ 1

No ☐ 2

b **Now that your baby is nine months old, does he/she cry very much?**

Yes ☐ 1

No ☐ 2

c **How easy is it to settle your baby NOW once she or he starts crying?**

Usually very easy ☐ 1

Usually fairly easy ☐ 2

Sometimes easy and sometimes difficult ☐ 3

Often difficult ☐ 4

Often very difficult ☐ 5

B4 **In the last week, which ONE of the following best describes your baby's pattern of sleeping?**

My baby has not woken up during the night AT ALL in the past week ☐ 1

My baby has rarely woken up during the night in the last week ☐ 2

My baby has woken up several nights in the last week ☐ 3

My baby has woken up once a night most nights in the last week ☐ 4

My baby has woken up twice a night most nights in the last week ☐ 5

My baby has woken up three or more times a night most nights in the last week ☐ 6

B5 **Do you feel like you are getting enough sleep yourself?**

Yes ☐ 1

No ☐ 2

B6 a Did you breastfeed your baby (or give expressed breastmilk)?

Yes ☐ 1

No ☐ 2 *(please go to B7)*

b Are you still breastfeeding your baby (or giving expressed breastmilk)?

Yes ☐ 1

No ☐ 2

B7 Has your baby had any problems feeding (breast or bottle) in the past THREE MONTHS?

a. Yes, quite a lot ☐ 1

b. Yes, some ☐ 2

b. No, none ☐ 3

B8 a Has your baby had any health problems or problems with development that have had a major impact on your life in the past three months?

Yes ☐ 1

No ☐ 2

b If YES, please describe:

____

____

____

____

B9 How confident do you feel NOW about looking after your baby?

a. Very confident ☐ 1

b. Fairly confident ☐ 2

c. Mixed ☐ 3

d. Fairly anxious ☐ 4

e. Not confident ☐ 5

B10 Is there anything else you would like to tell me about your baby?

____

____

____

____

Section C: Your health over the past THREE months

The next few questions are about your health over the PAST three months. If you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them. However, if you have experienced any of the symptoms or issues asked about, it would help us to understand them and it might help other women to know they are not alone in their experiences when the findings are published. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify you or **any** individual woman.

C1 In the past THREE MONTHS, have you experienced any of the following:
(Please tick one response on EACH line)

		Never	Rarely	Occasionally	Often
a.	Extreme tiredness or exhaustion	☐ 1	☐ 2	☐ 3	☐ 4
b.	Coughs, colds or other minor illnesses	☐ 1	☐ 2	☐ 3	☐ 4
c.	Severe headaches or migraines	☐ 1	☐ 2	☐ 3	☐ 4
d.	Back pain (in your lower back)	☐ 1	☐ 2	☐ 3	☐ 4
e.	Back pain (in the upper or middle part of your back	☐ 1	☐ 2	☐ 3	☐ 4
f.	Painful or sore perineum (from episiotomy / tear)	☐ 1	☐ 2	☐ 3	☐ 4
g.	Perineal wound infection	☐ 1	☐ 2	☐ 3	☐ 4
h.	Pain from caesarean section wound	☐ 1	☐ 2	☐ 3	☐ 4
i.	Caesarean section wound infection	☐ 1	☐ 2	☐ 3	☐ 4
j.	Uterine (womb) infection	☐ 1	☐ 2	☐ 3	☐ 4
k.	Pain when you pass urine	☐ 1	☐ 2	☐ 3	☐ 4
l.	Urinary tract infection	☐ 1	☐ 2	☐ 3	☐ 4
m.	Pain when passing a bowel motion	☐ 1	☐ 2	☐ 3	☐ 4
n.	Bleeding when you pass a bowel motion	☐ 1	☐ 2	☐ 3	☐ 4

		Never	Rarely	Occasionally	Often
o.	Constipation *(opening your bowels only twice a week or less, or pushing or straining to open your bowels every fourth time you go)*	☐ 1	☐ 2	☐ 3	☐ 4
p.	Haemorrhoids *(Swollen veins around your back passage, sometimes called piles)*	☐ 1	☐ 2	☐ 3	☐ 4
q.	Sore nipples	☐ 1	☐ 2	☐ 3	☐ 4
r.	Mastitis	☐ 1	☐ 2	☐ 3	☐ 4
s.	Pelvic pain	☐ 1	☐ 2	☐ 3	☐ 4
t.	Heavy vaginal bleeding or bleeding that worried you	☐ 1	☐ 2	☐ 3	☐ 4
u.	Other health issues *(please describe)*	☐ 1	☐ 2	☐ 3	☐ 4

____

____

____

C2 a. In the past THREE MONTHS, have you felt depressed for two weeks or longer?

Yes, and I still feel depressed ☐ 1

Yes, I felt depressed a while ago, but I feel better now ☐ 2

No ☐ 3 *(Please go to C3)*

b. When did you start feeling depressed?

Before pregnancy ☐ 1

During pregnancy ☐ 2

After the birth ☐ 3

c. Are you taking tablets or medication, or having treatment for depression?

Yes, I'm taking tablets or medications ☐ 1

Yes, I'm having treatment ☐ 2

No ☐ 3

Please comment if you wish ____

____

C3 a. SINCE THE BIRTH, have you experienced intense anxiety or panic attacks?

Never ☐ 1 (Please go to C4)

Rarely ☐ 2

Occasionally ☐ 3

Often ☐ 4

b. When did you start experiencing intense anxiety or panic attacks?

Before pregnancy ☐ 1

During pregnancy ☐ 2

After the birth ☐ 3

c. Are you taking tablets/medication or having treatment for anxiety or panic attacks now?

Yes, I'm taking tablets or medications ☐ 1

Yes, I'm having treatment ☐ 2

No ☐ 3

*Please comment if you wish*____

____

C4 In the past THREE MONTHS, have you experienced relationship problems with your partner or husband?

Never ☐ 1

Rarely ☐ 2

Occasionally ☐ 3

Often ☐ 4

C5 In the past THREE MONTHS, have you leaked even small amounts of urine:

a. When you coughed, laughed or sneezed, or did physical exercise?

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

b. When you were on the way to the toilet?

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

c. **When you had to wait to use the toilet?**

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

d. **If you did not go to the toilet immediately?**

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

C6a In the past THREE MONTHS, have you ever felt an URGENT need to urinate which was accompanied by a FEAR of leakage?

No, never ☐ 1

Yes, sometimes ☐ 2

C6b In the past THREE MONTHS, have you ever felt an URGENT need to urinate which was accompanied by ACTUAL leakage?

No, never ☐ 1

Yes, sometimes ☐ 2

If you answered NO to all of the questions in C5 and C6, please go to C11.

C7 When you leak urine, is it?

Drops or just a little ☐ 1

More like a trickle ☐ 2

More than a trickle ☐ 3

Not applicable – have always made it to the toilet ☐ 4

C8 Which of the following best describes how you manage this?

It is a minor problem, I ignore it ☐ 1

I carry a change of underwear with me wherever I go ☐ 2

I make sure I know where the nearest toilet is whenever I go out ☐ 3

I wear protection (e.g. pads or panty liners when I need to, e.g. when doing physical exercise) ☐ 4

I wear protection (e.g. pads or panty liners) **all** the time ☐ 5

Other *(please describe)* ☐ 6

____

____

C9 a. In the past THREE MONTHS have you discussed your bladder problems with anyone?

Yes ☐ 1

No ☐ 2

b. If YES, who did you discuss this with *(Please tick ALL that apply)*

General practitioner / local doctor ☐ 1

Public Health Nurse ☐ 2

GP Practice nurse ☐ 3

Obstetrician/gynaecologist ☐ 4

Physiotherapist ☐ 5

Other health professional ☐ 6

Partner ☐ 7

Friend ☐ 8

Sister ☐ 9

Mother ☐ 10

Other (please describe) ☐ 11

____

c. If NO, is it because

I have thought about it but haven't felt able to talk about it ☐ 1

I don't want to discuss it ☐ 2

Other (please describe) ☐ 3

____

____

C10 How would you describe these problems now

About the same ☐ 1

Better than before ☐ 2

It's no longer a problem ☐ 3

Please comment if you wish ____

____

C11 a. Have you taken, or have you been prescribed antibiotics for urinary infections in the past THREE MONTHS?

Yes ☐ 1

No ☐ 2

b. If yes, how many times have you taken antibiotics for urinary infections in the past THREE MONTHS?

Once ☐ 1

Twice ☐ 2

Three times or more ☐ 3

Please comment if you wish ____

____

____

If you are worried or concerned about leaking urine and wish to get help, you can discuss it with your doctor or you can call the **Rotunda Hospital's physiotherapy department.**

Rotunda hospital number: 01 8730700 and ask to be put through to the physiotherapy department. Web: http://www.rotunda.ie/

Opening hours: 9.00am to 4.30pm Monday – Friday

Outside these hours, an answering service is available and you can leave a message and someone will return your call.

The next few questions ask about bowel symptoms. Please do not include problems during short-term illnesses such as the flu or a short viral infection.

C12 In the past THREE MONTHS have you

a. Noticed soiling from your back passage on your underwear?

No, never ☐ 1

Minor amount ☐ 2

Major amount ☐ 3

b. Passed wind when you really didn't want to?

No, never ☐ 1

Yes, occasionally ☐ 2

Yes often ☐ 3

C13 a. In the past THREE MONTHS have you ever, even very occasionally, experienced leakage of LIQUID bowel motions at an inappropriate time or an inappropriate place?

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

b. If YES, when this happened how much leakage typically occurred?

Small amount *(with stain about the size of a 50 cent coin)* ☐ 1

Moderate amounts *(often requiring a change of pad or underwear)* ☐ 2

Large amounts *(often requiring a complete change of clothes)* ☐ 3

C14 a. In the past THREE MONTHS have you ever, even very occasionally, experienced leakage of <u>SOLID</u> bowel motions at an inappropriate time or inappropriate place?

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

b. If YES, when this happened how much leakage typically occurred?

Small amount *(with stain about the size of a 50 cent coin)* ☐ 1

Moderate amounts *(often requiring a change of pad or underwear)* ☐ 2

Large amounts *(often requiring a complete change of clothes)* ☐ 3

C15 In the past THREE MONTHS, have you ever experienced an URGENT need to open your bowels that made you rush to the toilet immediately?

No, never ☐ 1

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

C15a In the past THREE MONTHS, have you ever experienced an URGENT need to open your bowels that you could not delay or defer for more than 5 minutes?

No, never ☐ 1 (Please go to C19)

Yes, less than once a month ☐ 2

Yes, one or several times a month ☐ 3

Yes, one or several times a week ☐ 4

Yes, every day ☐ 5

C16 Which of the following best describe how you manage?

It doesn't happen very often and I just cope with it when it does	☐	1
I carry a change of underwear with me wherever I go and change whenever I need to	☐	2
I make sure I know where the nearest toilet is whenever I go out	☐	3
I wear protection *(e.g. pads or panty liners)* when I need to	☐	4
I wear protection *(e.g. pads or panty liners)* **all** the time	☐	5
Other (*please describe*)	☐	6

____

C17 a. In the past THREE MONTHS have you discussed your bowel problems with anyone?

Yes	☐	1
No	☐	2

C17 b. If YES, who did you discuss these with? *(Please tick all that apply)*

General practitioner / local doctor	☐	1
Public Health Nurse	☐	2
GP Practice Nurse	☐	3
Obstetrician/Gynaecologist	☐	4
Physiotherapist	☐	5
Other health professional	☐	6
Partner	☐	7
Friend	☐	8
Sister	☐	9
Mother	☐	10
Other (please describe)	☐	11

____

C17c **If no, is it because**

I have thought about it but haven't felt able to talk about it ☐ 1

I don't want to discuss it ☐ 2

Other *(Please describe)* ☐ 3

____

____

C18. **If you have experienced bowel problems in the past THREE MONTHS, how would you describe these problems now**

About the same ☐ 1

Better than before ☐ 2

It's no longer a problem ☐ 3

If you are worried or concerned about soiling from your back passage and wish to get help, you can discuss it with your doctor or you can call the **Rotunda Hospital's physiotherapy department.**

Rotunda hospital number: 01 8730700 and ask to be put through to the physiotherapy department. Web: http://www.rotunda.ie/

Opening hours: 9.00am to 4.30pm Monday – Friday

Outside these hours, an answering service is available and you can leave a message and someone will return your call.

The next few questions ask about perineal pain and pelvic floor problems you may have experienced in the past THREE MONTHS. The perineum is the area around the entrance to the vagina, including the labia and other external genital organs. Please answer these questions even if you had a caesarean section.

The words used to describe pain are in increasing order of intensity. Please tick ONE response on EACH line.

C19 How would you describe the worst pain or discomfort you feel CURRENTLY in the perineal area *(around the entrance to your vagina)* when you are*:*

	No pain	Mild	Discomforting	Distressing	Horrible	Excruciating
a. Lying in bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. Shifting positions in bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. Getting in and out of bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
d. Feeding your baby	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
e. Sitting in a chair	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
f. Lifting your baby	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
g. Walking	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
h. Bathing or showering yourself	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
i. Doing physical exercise e.g. running, aerobics, climbing stairs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
j. Carrying your baby for extended periods	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
k. Passing urine	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
l. Passing a bowel movement	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

Please comment if you wish ______________________________

____

C20 a. In the past four weeks have you used any tablets/medication or other therapies for pain or tenderness in the perineal area *(around the entrance to your vagina)*?

Yes ☐ 1

No ☐ 2

b. If yes, which medication have you used (tick ALL that apply)

	Yes	**No**	**Not sure**
a Paracetemol *(e.g. Panadol®)*	☐ 1	☐ 2	☐ 3
b. Paracetamol and codeine *(panadeine)*	☐ 1	☐ 2	☐ 3
c. Ponstan®	☐ 1	☐ 2	☐ 3
d. Difene (Voltarol) *(taken orally)*	☐ 1	☐ 2	☐ 3
e. Difene (Voltarol) *(suppository inserted into the back passage)*	☐ 1	☐ 2	☐ 3
f. Nurofen/Isobrufen	☐ 1	☐ 2	☐ 3
g. Aspirin	☐ 1	☐ 2	☐ 3
h. Local anaesthetic gel	☐ 1	☐ 2	☐ 3
i. Herbal remedies	☐ 1	☐ 2	☐ 3
j. Other *(please describe)*	☐ 1		

____

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C21 a. In the past THREE MONTHS, have you discussed this perineal pain with anyone?

Yes ☐ 1

No ☐ 2

b. If YES, who did you discuss it with? *(Please tick ALL that apply.)*

General practitioner / local doctor	☐ 1
Public Health Nurse	☐ 2
GP practice nurse	☐ 3
Obstetrician/Gynaecologist	☐ 4
Physiotherapist	☐ 5
Other health professional	☐ 6
Partner	☐ 7
Friend	☐ 8
Sister	☐ 9
Mother	☐ 10
Other (Please describe)	☐ 11

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When you were pregnant and since you gave birth, you may have been encouraged to do **pelvic floor exercises.** These exercises involve contracting your pelvic floor, as you would do if you interrupted the flow of urine midstream. **The pelvic floor is the muscular structure that supports your rectum, uterus and bladder.**

C22 a. To what extent would you say your pelvic floor feels 'back to normal' as opposed to too loose or slack?

Completely back to normal ☐ 1

Almost back to normal ☐ 2

Moderately back to normal ☐ 3

Somewhat back to normal ☐ 4

Not at all back to normal ☐ 5

b. If your pelvic floor does not feel completely back to normal, please describe the ways in which it feels different?

____

____

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C23 a. In the last month, have you been doing pelvic floor exercises?

Yes, regularly ☐ 1

Yes, when I remember ☐ 2

No ☐ 3

b. If YES, approximately how often do you do them?

☐ Number of days each week ☐☐ Number of times per day

C24 a. In the past THREE MONTHS, has there been any period when you felt as if something was bulging or falling down in the vaginal area?

Yes, often	☐	1
Yes, sometimes	☐	2
No, not at all	☐	3

b. Are you CURRENTLY having trouble with a feeling of bulging or falling down in the vaginal area?

Yes, often	☐	1
Yes, sometimes	☐	2
No , not at all	☐	3

C25 a. To what extent would you say your vagina feels 'back to normal' or like it did before you got pregnant?

Completely back to normal	☐	1
Almost back to normal	☐	2
Moderately back to normal	☐	3
Somewhat back to normal	☐	4
Not at all back to normal	☐	5

b. If your vagina does not feel completely back to normal, please describe the way(s) in which it feels different?

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The final question in this section asks about abdominal pain *(tummy pain)* **you may have experienced in the past THREE MONTHS. Please answer this question whether you had a caesarean section or a vaginal birth.**

C26 How would you describe the worst pain or discomfort you feel CURRENTLY in your lower abdomen *(below your tummy)* **when you are:**

The words used to describe pain are in increasing order of intensity. Please tick ONE response to EACH line.

	No pain	Mild	Discomforting	Distressing	Horrible	Excruciating
a. Lying in bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
b. Shifting positions in bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
c. Getting in and out of bed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
d. Feeding your baby	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
e. Sitting in a chair	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
f. Lifting your baby	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
g. Walking	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
h. Bathing or showering yourself	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
i. Doing physical exercise e.g. running, aerobics, climbing stairs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
j. Carrying your baby for extended periods	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
k. Passing urine	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
l. Passing a bowel movement	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

*Please comment if you wish*____

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C27 a. In the past four weeks have you used any medication or other therapies for pain or tenderness in your tummy area?

Yes ☐ 1

No ☐ 2

b. If yes, which medication have you used (tick ALL that apply)?

	Yes	No	Not sure
a Paracetemol *(e.g. Panadol®)*	☐ 1	☐ 2	☐ 3
b. Paracetamol and codeine *(panadeine)*	☐ 1	☐ 2	☐ 3
c. Ponstan®	☐ 1	☐ 2	☐ 3
d. Difene (Voltarol) *(taken orally)*	☐ 1	☐ 2	☐ 3
e. Difene (Voltarol) *(suppository inserted into the back passage)*	☐ 1	☐ 2	☐ 3
f. Nurofen/Isobrufen	☐ 1	☐ 2	☐ 3
g. Aspirin	☐ 1	☐ 2	☐ 3
h. Local anaesthetic gel	☐ 1	☐ 2	☐ 3
i. Herbal remedies	☐ 1	☐ 2	☐ 3
j. Other *(please describe)*	☐ 1	☐ 2	☐ 3

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C28 a. In the past THREE MONTHS, have you discussed this tummy pain with anyone?

Yes ☐ 1

No ☐ 2

b. If YES, who did you discuss it with? *(Please tick ALL that apply.)*

- General practitioner / local doctor ☐ 1
- Public Health Nurse ☐ 2
- GP practice nurse ☐ 3
- Obstetrician/Gynaecologist ☐ 4
- Physiotherapist ☐ 5
- Other health professional ☐ 6
- Partner ☐ 7
- Friend ☐ 8
- Sister ☐ 9
- Mother ☐ 10
- Other ☐ 11

____

____

C29 NOW, 9 months AFTER THE BIRTH of your baby, are you satisfied with your body image?

Always	Sometimes	Never
☐ 1	☐ 2	☐ 3

Please comment if you wish ____

____

____

C30 Please look at the two pictures below. Picture A is looking at the body from the front. Picture B is looking at the body from the back. In the past THREE MONTHS, have you experienced pain in any of the parts of the body named?

Yes ☐ 1 No ☐ 2

A. ***Please tick the boxes if you have experienced pain in any of the parts of the body named in the past THREE MONTHS.***

Picture A
Front of Body

a. Head (front or sides) ☐ 1

b. Neck ☐ 1

c. Shoulder left ☐ 1
Shoulder right ☐ 2

d. Rib pain (bones in chest) ☐ 1

e. Upper arm left ☐ 1
Upper arm right ☐ 2

f. Lower arm
left ☐ 1
right ☐ 2

g. Wrist Left ☐ 1
Wrist (right) ☐ 2

h. Hand left ☐ 1
Hand right ☐ 2

i. Fingers left ☐ 1
Fingers right ☐ 2

j. Hip left ☐ 1
Hip right ☐ 2

k. Bone at front of pelvis ☐ 1

l. Thigh (left) ☐ 1
Thigh (right) ☐ 2

m. Knee (left) ☐ 1
Knee (right) ☐ 2

n. Lower leg (left) ☐ 1
Lower leg (right) ☐ 2

o. Ankle (left) ☐ 1
Ankle (right) ☐ 2

p. Foot (left) ☐ 1
Foot (right) ☐ 2

If you have experienced pain in any of these areas in the past 3 months, please complete SECTION C31-C36 as well.

If you have experienced pain in this area in the past 3 months, please complete SECTION C31-C36 as well.

If you experienced pain in any other parts not named or shown here, please tick here ☐

Please give details ____

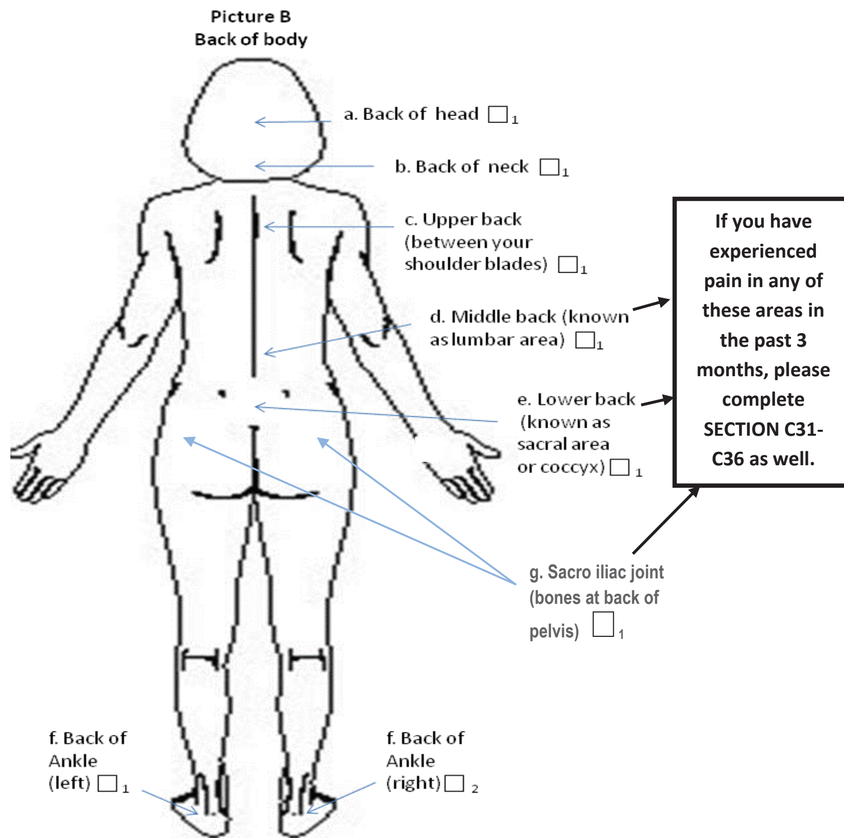
____

____

Please tick the boxes if you have experienced pain in any parts of the body named or shown in the past THREE MONTHS.

B. **Picture B**

Back of Body



If you have experienced pain in any of these areas in the past 3 months, please complete SECTION C31-C36 as well.

If you experienced pain in any other parts not named or shown here, please tick here ☐

Please give details ____

____

Most pain can be treated successfully. If you are worried or concerned about pain and wish to get help, you should discuss it with your doctor or another health professional.

The next few questions ask about your BACK and/or PELVIC GIRDLE PAIN. (If you have not had low back or pelvic girdle pain in the past 3 months, go directly to section D on page 38.)

C31 How problematic is it for you because of your back and/or pelvic girdle pain to do the following:

	Not at all	To a small extent	To some extent	To a large extent
a. Dress yourself	☐ 0	☐ 1	☐ 2	☐ 3
b. Stand for less than 10 minutes	☐ 0	☐ 1	☐ 2	☐ 3
c.Stand for more than 60 minutes	☐ 0	☐ 1	☐ 2	☐ 3
d. Bend down	☐ 0	☐ 1	☐ 2	☐ 3
e. Sit for less than 10 minutes	☐ 0	☐ 1	☐ 2	☐ 3
f. Sit for more than 60 minutes	☐ 0	☐ 1	☐ 2	☐ 3
g. Walk for less than 10 minutes	☐ 0	☐ 1	☐ 2	☐ 3
h. Walk for more than 60 minutes	☐ 0	☐ 1	☐ 2	☐ 3
i. Climb stairs	☐ 0	☐ 1	☐ 2	☐ 3
j. Do housework	☐ 0	☐ 1	☐ 2	☐ 3
k. Carry light objects	☐ 0	☐ 1	☐ 2	☐ 3
l. Carry heavy objects	☐ 0	☐ 1	☐ 2	☐ 3
m. Get up/sit down	☐ 0	☐ 1	☐ 2	☐ 3
n. Push a shopping cart	☐ 0	☐ 1	☐ 2	☐ 3
o. Run	☐ 0	☐ 1	☐ 2	☐ 3
p. Carry out sporting activities	☐ 0	☐ 1	☐ 2	☐ 3
q. Lie down	☐ 0	☐ 1	☐ 2	☐ 3
r. Roll over in bed	☐ 0	☐ 1	☐ 2	☐ 3
s. Have a normal sex life	☐ 0	☐ 1	☐ 2	☐ 3
t. Push something with one foot	☐ 0	☐ 1	☐ 2	☐ 3

C32 How much back and/or pelvic girdle pain do you experience:

	None	Some	Moderate	Considerable
a. In the morning	☐ 0	☐ 1	☐ **2**	☐ 3
b. In the evening	☐ 0	☐ 1	☐ 2	☐ 3

C33 To what extent because of your back and/or pelvic girdle pain:

	Not at all	To a small extent	To some extent	To a large extent
a.Has your leg/have your legs given way?	☐ 0	☐ 1	☐ 2	☐ **3**
b.Do you do things more slowly?	☐ 0	☐ 1	☐ 2	☐ **3**
c.Is your sleep interrupted?	☐ 0	☐ 1	☐ 2	☐ **3**

C34 To what extent because of your back and/or pelvic girdle pain do you have difficulty lifting/ handling your baby?

Not at all	To a small extent	To some extent	To a large extent
☐ **0**	☐ 1	☐ 2	☐ 3

C35 a. In the past four weeks have you used any tablets/medication or other therapies for pain or tenderness in the back and/or pelvic girdle area?

Yes ☐ 1 **No** ☐ 2

b.If YES, which medication have you used (tick ALL that apply)

		Yes	No	Unsure
a.	Paracetemol *(e.g. Panadol®)*	☐ 1	☐ 2	☐ 3
b.	Paracetamol and codeine *(panadeine)*	☐ 1	☐ 2	☐ 3
c.	Ponstan®	☐ 1	☐ 2	☐ 3
d.	Difene (Voltarol) *(taken orally)*	☐ 1	☐ 2	☐ 3
e.	Difene (Voltarol) *(suppository inserted into back passage)*	☐ 1	☐ 2	☐ 3
f.	Nurofen/Isobrufen	☐ 1	☐ 2	☐ 3
g.	Aspirin	☐ 1	☐ 2	☐ 3
h.	Local anaesthetic gel	☐ 1`	☐ 2	☐ 3
i.	Other *(please describe)*	☐ 1	☐ 2	☐ 3

____

C36 a. In the past THREE MONTHS, have you discussed this back/pelvic girdle pain with anyone?

Yes ☐ 1 No ☐ 2

b. If YES, who did you discuss it with? *(Please tick ALL that apply.)*

General practitioner / local doctor	☐ 1	Partner	☐ 7
Public Health Nurse	☐ 2	Friend	☐ 8
GP practice nurse	☐ 3	Sister	☐ 9
Obstetrician/Gynaecologist	☐ 4	Mother	☐ 10
Physiotherapist	☐ 5	Other (Please describe below)	☐ 11
Other health professional	☐ 6	________________________________	

Section D: Sex after childbirth

The next few questions are about your sexuality and sexual health since the birth. Again, if you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them. However, if you have experienced any of the symptoms or issues asked about, it would help us to understand them and it might help other women to know they are not alone in their experiences when the findings are published. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify you or **any** individual woman.

D1 a. When did you first have sexual or intimate contact again after you had your baby:
(Please include all forms of sexual contact i.e. do not restrict your answer to vaginal intercourse.)

I have not had sexual or intimate contact since the birth ☐ 1 (Please go to D2)

During the first 3 months ☐ 2

4-6 months after the birth ☐ 3

7-9 months after the birth ☐ 4

b. Did you feel that this was:

Too soon after the birth ☐ 1

Would have liked to start sooner ☐ 2

About the right time after the birth ☐ 3

D2 a. If you have NOT had any sexual or intimate contact since the birth is this because?

You do not have a partner ☐ 1

Other reasons ☐ 2

b. If you have a partner, but have not had any sexual or intimate contact since the birth, please tell me why? *(Please tick ALL that apply.)*

Too tired / exhausted	☐	1
Relationship problems	☐	2
Scared it will be painful	☐	3
Fear of getting pregnant	☐	4
Baby waking up	☐	5
Still experiencing pain from perineal wound	☐	6
Still experiencing pain from caesarean section	☐	7
Don't feel interested	☐	8
Other reason (please describe)	☐	9

____

____

____

If you have not had any sexual or intimate contact since the birth, please go to question D12.

D3 a. Have you had vaginal intercourse since your baby was born?

Yes	☐	1
Tried on one or more occasions, but it was too painful each time I tried	☐	2
No	☐	3

b. **When did you first have vaginal intercourse again *(or attempt vaginal intercourse again)* after you had your baby?**

I have not had sexual or intimate contact since the birth ☐ 1 (Please go to D12)

During the first 3 months ☐ 2

4-6 months after the birth ☐ 3

7-9 months after the birth ☐ 4

c. **Did you feel that this was:**

Too soon after the birth ☐ 1

Would have liked to start sooner ☐ 2

About the right time after the birth ☐ 3

D4 **How much pain or discomfort, if any, did you feel the first time you attempted to have vaginal intercourse after your baby was born?**

No pain ☐ 1

Mild ☐ 2

Discomforting ☐ 3

Distressing ☐ 4

Horrible ☐ 5

Excruciating ☐ 6

D5 **a.** **Other than the first time you tried having vaginal intercourse after your baby's birth, have you experienced pain or discomfort during vaginal intercourse in the past THREE MONTHS?**

Yes ☐ 1

No ☐ 2

Haven't tried again ☐ 3

b. **If YES, how would you describe the worst pain or discomfort you have experienced?**

Mild ☐ 1

Discomforting ☐ 2

Distressing ☐ 3

Horrible ☐ 4

Excruciating ☐ 5

D6 **a.** **Are you still experiencing pain or tenderness during vaginal intercourse?**

Yes ☐ 1

No ☐ 2

b. **If NO, how many weeks after you baby's birth was it when vaginal intercourse stopped being painful?**

☐☐ Number of weeks after the birth

D7 **How often would you say intercourse is painful for you NOW?**

Always painful ☐ 1

Painful most of the time ☐ 2

Occasionally painful ☐ 3

Rarely painful ☐ 4

D8 a. How would you describe the pain or discomfort you are experiencing during vaginal intercourse NOW?

- No pain ☐ 1
- Mild pain ☐ 2
- Discomforting ☐ 3
- Distressing ☐ 4
- Horrible ☐ 5
- Excruciating ☐ 6

b. Looking at the following list, please tick the words that apply to the pain or discomfort you are experiencing during vaginal intercourse NOW.

- Aching ☐ 1
- Throbbing ☐ 2
- Shooting ☐ 3
- Stabbing ☐ 4
- Gnawing ☐ 5
- Sharp ☐ 6
- Tender ☐ 7
- Burning ☐ 8
- Exhausting ☐ 9
- Tiring ☐ 10
- Penetrating ☐ 11
- Nagging ☐ 12
- Miserable ☐ 13
- Unbearable ☐ 14

D9 a. Have you discussed the pain or discomfort you are experiencing with anyone?

Yes ☐ 1

No ☐ 2

b. If YES, who have you discussed this with *(Please tick ALL that apply.)*

General practitioner / local doctor ☐ 1

Public Health Nurse ☐ 2

GP Practice Nurse ☐ 3

Obstetrician/Gynaecologist ☐ 4

Physiotherapist ☐ 5

Other health professional ☐ 6

Partner ☐ 7

Friend ☐ 8

Sister ☐ 9

Mother ☐ 10

Other (Please describe) ☐ 11

____

D10 In the past THREE months, how satisfied are you with your overall sex life?

Very satisfied ☐ 1

Moderately satisfied ☐ 2

Equally satisfied/dissatisfied ☐ 3

Moderately dissatisfied ☐ 4

Very dissatisfied ☐ 5

Prefer not to answer ☐ 6

D11 In the PAST four weeks, have you had:

		Yes	No	Prefer not to answer
a.	Oral sex	☐ 1	☐ 2	☐ 3
b.	Anal sex	☐ 1	☐ 2	☐ 3
c.	Other sexual contact *(i.e. forms of contact with the genital area not leading to intercourse but intended to achieve orgasm)*	☐ 1	☐ 2	☐ 3

D12 How emotionally satisfying have you found your relationship with your partner in the past THREE MONTHS?

Extremely emotionally satisfying	☐ 1
Very emotionally satisfying	☐ 2
Moderately emotionally satisfying	☐ 3
Slightly emotionally satisfying	☐ 4
Not at all emotionally satisfying	☐ 5
Not sure	☐ 6

D13 In the past THREE MONTHS have you experienced any of the following:
(Please tick one response on each line.)

	Yes	No	Prefer not to answer
a. Lack of vaginal lubrication	☐ 1	☐ 2	☐ 3
b. Painful penetration	☐ 1	☐ 2	☐ 3
c. Pain during sexual intercourse	☐ 1	☐ 2	☐ 3
d. Pain on orgasm	☐ 1	☐ 2	☐ 3
e. Difficulty reaching orgasm	☐ 1	☐ 2	☐ 3
f. Unable to reach orgasm	☐ 1	☐ 2	☐ 3
g. Vaginal tightness	☐ 1	☐ 2	☐ 3

	Yes	No	Prefer not to answer
h. Vaginal looseness / lack of muscle tone	☐ 1	☐ 2	☐ 3
i. Bleeding or physical irritation after sex	☐ 1	☐ 2	☐ 3
j. Loss of interest in sex compared with before your pregnancy	☐ 1	☐ 2	☐ 3
k. More interest in sex compared with before your pregnancy	☐ 1	☐ 2	☐ 3
l. Being pressured to take part in unwanted sexual activity	☐ 1	☐ 2	☐ 3
m. Being forced to take part in unwanted sexual activity	☐ 1	☐ 2	☐ 3
n. Other *(Please describe)*	☐ 1	☐ 2	☐ 3

____

____

D14 a. Have you ever discussed any of the above with anyone?

Yes ☐ 1

No ☐ 2

b. If YES, who have you discussed this with *(Please tick ALL that apply.)*

General practitioner / local doctor ☐ 1

Public Health Nurse ☐ 2

GP Practice Nurse ☐ 3

Obstetrician/Gynaecologist ☐ 4

Physiotherapist ☐ 5

Other health professional ☐ 6

Partner ☐ 7

Friend	☐	8
Sister	☐	9
Mother	☐	10
Other (Please describe)	☐	11

____

c. **What issues did you discuss?** *(Please tick all that apply)*

Lack of vaginal lubrication	☐	1
Painful penetration	☐	2
Pain on orgasm	☐	3
Difficulty reaching orgasm	☐	4
Vaginal tightness	☐	5
Vaginal looseness / lack of muscle tone	☐	6
Bleeding or physical irritation after sex	☐	7
Loss of interest in sex compared with before your pregnancy	☐	8
More interest in sex compared with before your pregnancy	☐	9
Being pressured to take part in unwanted sexual activity	☐	10
Being forced to take part in unwanted sexual activity	☐	11
Other *(Please describe)*	☐	12

____

____

D15 **During the past THREE, which of the following best describes the frequency of your sexual activity** *(please tick only one response)*

a. 1-2 times per month	☐ 1	**Prefer not to answer**	☐ 5
b. 1-2 times per week	☐ 2		
c. 3-4 times per week	☐ 3		
d. More than 4 times per week	☐ 4		

Please comment if you wish ____

D16 Overall, would you say that your sex life has changed in the past THREE MONTHS?

It has improved	☐ 1
It's about the same	☐ 2
Not as good	☐ 3
Not sure	☐ 4

D17 How often have the following issues affected your sex life in the past THREE MONTHS?

	Very often	Often	Sometimes	Rarely	Never
a. Tiredness / exhaustion	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
b. Feeling, depressed, low or blue	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
c. Relationship problems	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
d. Pain / tenderness	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
e. Lack of time	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
f. Baby waking up / interrupting you	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
g. Other (please describe)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

____

____

D18 Is there anything else you would like to tell me about in relation to your sexual and intimate relationships in the past THREE MONTHS?

____

____

____

____

If you are worried or concerned about pain when having sex and wish to get help, you can discuss it with your doctor.

If you are worried or concerned about unwanted or forced sexual activity and wish to get help, you can call the **Sexual Assault Treatment Unit (SATU)** based in the Rotunda hospital.

SATU telephone number: 01 8171736

SATU e-mail: SATU@ROTUNDA.IE

Web: http://www.rotunda.ie/

Opening hours: 9.00am to 4.30pm Mon – Fri

Outside of these hours please contact the Rotunda Hospital at 01 8171700

Or you can call the **national** Dublin Rape Crisis Centre. The Dublin Rape Crisis Centre was established in 1979 and is a national organisation offering a wide range of services to women and men who are affected by rape, sexual assault, sexual harassment or childhood sexual abuse.

The services include a national **24-hour helpline**, one to one counselling, court accompaniment, outreach services, training, awareness raising and lobbying.

Dublin Rape Crisis Centre telephone number: HELPLINE 1800 778888

Section E: Your emotional health and well-being now

*The next few questions are about your emotional health and well-being now. Again, if you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them, but if you have experienced any of the symptoms or issues asked about, it would help us to understand them. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify **any** individual woman.*

Please look at the following statements and for each one think about how you have been feeling IN THE LAST WEEK.

E1 a. During the last week I have been able to laugh and see the funny side of things

- As much as I always could ☐ 1
- Not quite as much now ☐ 2
- Definitely not as much now ☐ 3
- Not at all ☐ 4

b. During the last week I have looked forward with enjoyment to things

- As much as I ever did ☐ 1
- Rather less than I used to ☐ 2
- Definitely less than I used to ☐ 3
- Hardly at all ☐ 4

c. During the last week I have blamed myself unnecessarily when things went wrong

- Yes, most of the time ☐ 1
- Yes, some of the time ☐ 2
- Not very often ☐ 3
- No, never ☐ 4

d. During the last week I have felt worried and anxious for no very good reason

No, not at all ☐ 1

Hardly ever ☐ 2

Yes, sometimes ☐ 3

Yes, very often ☐ 4

e. During the last week I have felt scared or panicky for no very good reason

Yes, quite a lot ☐ 1

Yes, sometimes ☐ 2

No, not much ☐ 3

No, not at all ☐ 4

f. During the last week things have been getting on top of me

Yes, most of the time I haven't been able to cope at all ☐ 1

Yes, sometimes I haven't been coping as well as usual ☐ 2

No, most of the time I have copied quite well ☐ 3

No, I have been coping as well as ever ☐ 4

g. During the last week I have been so unhappy that I have had difficulty sleeping

Yes, most of the time ☐ 1

Yes, sometimes ☐ 2

Not very often ☐ 3

No, not at all ☐ 4

h. During the last week I have felt sad or miserable

Yes, most of the time ☐ 1

Yes, quite often ☐ 2

Not very often ☐ 3

No, not at all ☐ 4

i. During the last week I have been so unhappy that I have been crying

Yes, most of the time ☐ 1

Yes, quite often ☐ 2

Only occasionally ☐ 3

No, never ☐ 4

j. During the last week the thought of harming myself has occurred to me

Yes, quite often ☐ 1

Sometimes ☐ 2

Hardly ever ☐ 3

Never ☐ 4

E2 Is there anyone you can talk to about how you are feeling? *(Please tick ALL that apply.)*

Yes, but I am not sure they understand ☐ 1

Yes, and they are very supportive ☐ 2

No, there isn't anyone I can really talk to ☐ 3

I don't particularly want to talk about how I feel ☐ 4

There isn't anything I feel I need to talk about ☐ 5

E3 Looking back over the time in the past THREE MONTHS, would you like to have had more emotional support *(e.g. someone who regularly asked how you were, someone happy to listen to how you were feeling)*?

Yes, definitely ☐ 1

Yes, probably ☐ 2

No, not really ☐ 3

Please comments if you wish ____

____

E4. Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *OVER THE PAST WEEK*. There are no right or wrong answers. Do not spend too much time on any statement.

		Not at all	Some of the time	A good part of the time	Most of the time
1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g. in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3

		Not at all	Some of the time	A good part of the time	Most of the time
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

If you are experiencing any problems with your emotional health and wellbeing and wish to talk to someone, you can telephone the mental health support team at the Rotunda hospital. The midwife is Louise Rafferty, telephone: 01- 817 1700 bleep 472

Or you can call the Aware (Depression) Helpline on 1890 303 302

TEXT MESSAGING

Information on where to go for help in a crisis is now available through your mobile phone. Text the word HeadsUp to 50424. The HeadsUp text service is run by RehabCare and sponsored by Meteor.

ONLINE information and support

A number of support services are now using the internet to reach out to people.

For example, www.yourmentalhealth.ie

Section F: About you and your household

The next few questions ask for personal details about your household and social factors. Sometimes social factors can affect women's health in pregnancy and this is why these questions have been included here.

All the information that you provide is **confidential** and cannot be linked to you as an individual or your household and there is no possibility that any of this information will be passed on to any other agency or department, government or otherwise.

F1 Are you currently: *(Please tick ONE only.)*

- Married ☐ 1
- Living with a partner (boyfriend/girlfriend) ☐ 2
- Divorced or separated ☐ 3
- In a relationship - not living together ☐ 4
- Widowed ☐ 5
- Single ☐ 6

F2 Who else lives together with you in your household? *(Please tick ALL that apply.)*

- Your child ☐ 1
- Your partner/husband ☐ 2
- Your mother ☐ 3
- Your father ☐ 4
- Your partner's mother ☐ 5
- Your partner's father ☐ 6
- Partner's child/children from previous relationship ☐ 7
- Your sister(s) and/or brother(s) ☐ 8
- A friend/friends ☐ 9

Nanny/au pair ☐ 10

No one ☐ 11

Other *(please describe)* ☐ 12

____

F3 How would you describe your CURRENT living accommodation?

House *(with a mortgage)* ☐ 1

House *(with no mortgage)* ☐ 2

Apartment *(with a mortgage)* ☐ 3

Apartment *(with no mortgage)* ☐ 4

Rented house *(rented privately)* ☐ 5

Rented house *(rented from local authority)* ☐ 6

Rented apartment *(rented privately)* ☐ 7

Rented apartment *(rented from local authority)* ☐ 8

Caravan / Mobile Home ☐ 9

Bed and breakfast accommodation ☐ 10

Hostel accommodation ☐ 11

No fixed accommodation *(homeless)* ☐ 12

Other, please give details ☐ 13

Please comment if you wish ____

____

____

F4 a. Since having your baby have you gone back to work or study?

- Yes, gone back to paid work ☐ 1
- Yes, returned to study ☐ 2
- Am on paid maternity leave ☐ 3
- Am on unpaid maternity leave ☐ 4
- No, not in paid work or studying at the present time ☐ 5 *(Please go to F6)*

b. How old was your baby when you returned to paid work or study?

- Less than seven weeks old ☐ 1
- Between seven weeks old and three months old ☐ 2
- More than three months old ☐ 3

c. How many hours did you spend at work or studying last week?

- Less than 10 hours ☐ 1
- Between 10 and 20 hours ☐ 2
- More than 20 hours ☐ 3

F5 How would you describe your current employment status *(please tick one response)*

- I gave up my job when my baby was born ☐ 1
- Full time paid work ☐ 2
- Part-time paid work ☐ 3
- Casual paid-work ☐ 4
- Looking for first job ☐ 5
- Unemployed ☐ 6
- Student or pupil ☐ 7

Looking after home/family ☐ 8

Unable to work due to sickness / disability ☐ 9

Unpaid voluntary work ☐ 10

Others *(Please describe)* ☐ 11

____

____

F6 a. Are you hoping to have another baby?

Yes ☐ 1

No ☐ 2

Not sure ☐ 3

F6 b. If YES, would you prefer to have?

A vaginal birth ☐ 1

A caesarean section ☐ 2

No particular preference ☐ 3

Section G: you and your relationships

The next few questions are about you and your relationships and ask about your experiences in adult intimate relationships (for example, husband, partner, girlfriend or boyfriend of longer than one month.)

Again, if you feel uncomfortable answering any of these questions or they are too personal, you do not have to answer them. However, if you have experienced any of the symptoms or issues asked about, it would help us to understand them and it might help other women to know they are not alone in their experiences when the findings are published. Again, We would like to reassure you that all the information that you provide is **strictly confidential** and all the findings from this survey will be presented and published in a way that does not identify you or **any** individual women.

G1 Are you currently in a relationship?

Yes ☐ 1 No ☐ 2

G2 Are you afraid of your current partner?

Yes ☐ 1 No ☐ 2

G3 Have you ever been afraid of any partner?

Yes ☐ 1 No ☐ 2

Please comment if you wish ____

____

____

____

G4 I would like to know if you have experienced any of the actions listed below and how often they happened during the last THREE months. Please answer, even if you are not with a partner at present. *(Please indicate how often it happened* ***OVER THE LAST 3-MONTH PERIOD****, by ticking one box on each line)*

My Partner …	Never	Only once	Several times	Once a month	Once a week	Daily
Told me I wasn't good enough	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Tried to turn my family, friends and children against me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Slapped me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Told me I was ugly	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Tried to keep me from seeing or talking to my family	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Threw me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Blamed me for causing their violent behaviour	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Shook me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Pushed, grabbed or shoved me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Became upset if dinner/housework wasn't done when they thought it should be	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Told me I was crazy	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Told me no-one would ever want me	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Hit or tried to hit me with something	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Did not want me to socialise with my female friends	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Kicked me, bit me or hit me with a fist	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Tried to convince my friends, family or children that I was crazy	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Told me I was stupid	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
Beat me up	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

Please comment if you wish ____

____

____

____

G5 Have you told anyone about the above experiences? *(Please tick ALL that apply.)*

I have not had any of the above experiences ☐ 1

I have not told anyone ☐ 2

I have told my Public Health Nurse ☐ 3

I have told my regular GP/family doctor ☐ 4

I told someone else *(Please say who)* ☐ 5

____

If you would like to tell us more about your experiences please use the space below.

____

____

____

____

____

Women's Aid - working to end violence against women

If you need help, phone them on:
National Freephone Helpline
1800 341 900 - 10am to 10pm

http://www.womensaid.ie/

Email: info@womensaid.ie

Everton House
47 Old Cabra Road
Dublin 7
Tel: +353 1 868 4721
Fax: +353 1 868 4722

If you or someone you know is experiencing domestic violence, Women's Aid can help:

- **Women's Aid** operate the National Freephone Helpline 1800 341 900 (10am to 10pm, 7 days a week except Christmas Day)
- **Women's Aid** provide one to one support in six locations throughout Dublin including Cabra, Coolock, Swords, Dublin City Centre, Amiens and Ballymun.
- **Women's Aid** provide a court accompaniment service in the Greater Dublin Area.
- **Women's Aid** refer women to local domestic violence support services and refuges.

All of **Women's Aid** services offer **free**, confidential support to women and their children who are experiencing domestic violence in the Republic of Ireland.

H1 Now that you have got to the end of this part of the survey I am interested in knowing how you found it? *(Please tick ALL that apply.)*

- I managed to finish it but it took ages. ☐ 1
- I was pleased to be asked about my experiences ☐ 2
- It was OK ☐ 3
- It was interesting ☐ 4
- I didn't understand some of the terms or language used ☐ 5
- Other (*please say what*) ☐ 6

____

____

____

____

H2 About the MAMMI Study website http://www.mammi.ie

a. Have you had an opportunity to look at the MAMMI Study website?

Yes ☐ 1 No ☐ 2

b. Did you recommend the website to others?

Yes ☐ 1 No ☐ 2

c. If you have looked at the website, please comment on how you found it and/or what other information **you** would have liked to see on it.

____

____

____

____

Comments

If you wish to write any further comments please do so on this page. Thank you.

Please help us to keep in touch.

If your address or other contact details have changed *(or you are about to move),* please fill in the details below:

Your NEW address:	Your NEW phone number(s):

Thank you for taking the time to complete this survey.

We are very grateful for the time and trouble you have taken to participate in the study. All the information you provide will help us to fill in some of the gaps in what is currently known about first-time mothers' health during pregnancy and after giving birth.

Please use the reply paid envelope to send it back to us. If no envelope was enclosed with this survey or you have mislaid it, please call **us on 087 1956441** and we will send you out another one.

The fourth survey results will not be available until all of the women taking part in the study have given birth. As soon as the results are available, we will let you know via the website and the study newsletter for participants.

Please call us if you have any questions about the study. We look forward to contacting you again when your baby is nine months old.

Best wishes.

The MAMMI study team

Our sincerest thanks to Dr Stephanie Brown, Murdock Children's Research Institute, Melbourne, Australia for granting us permission to amend and use this survey in an Irish setting.

Appendix 9: Instructions given to the panel of experts for content validity of Surveys 1 and 2

The MAMMI (Maternal health And Maternal Morbidity in Ireland) Study

Content validity rating tool for Survey 1

The aim of the MAMMI study is to identify the existence, extent and prevalence of maternal morbidity in women having their first baby antenatally and at 3, 6, 9 and 12 months after birth.

The MAMMI study consists of FIVE surveys and will be administered to 1600 consenting nulliparous women on five occasions:
(1) Antenatally (at the booking visit); **(2)** at 3 months postpartum (postal); **(3)** at 6 months postpartum (postal); **(4)** at 9 months postpartum (postal) and **(5)** at 12 months postpartum (postal).

Content validity is concerned with the adequacy of coverage of the content being measured (Polit & Beck 2006).

This is the **content validity** rating tool for **Survey 1: THE ANTENATAL SURVEY** which will be issued to 1600 nulliparous women with an information letter, the study information booklet and consent forms at their first booking visit. To be eligible to participate in the study women must be (i) ages 18 years or over and (ii) be able to read and understand English.

This document if designed to be read alongside **Survey 1: Antenatal** (yellow) of the MAMMI study.

I should be very grateful if you would:

i. **Review the instructions, responses and options for each item in the survey for clarity and write your concerns in the 'comment' column of this rating tool.**
ii. **Determine the** RELEVANCE **each item in this survey, that is, determine if the item and the response options are relevant to maternal health and maternal morbidity by rating it on a scale of 1-4 (as shown overleaf).**

Please indicate the relevance of each item by placing an X or √ in the box in the appropriate column. The item numbers in this document correspond to the items in **Survey 1** of the MAMMI study.

The last page of this document contains a section for you to write your comments on the completeness of the survey. Here, can you include comments on the overall style and presentation of the survey.

I realise that this is a lengthy process and am grateful for your time and efforts.

Thank you for your interest and support

Regards

Deirdre (Daly) Midwifery Doctoral Student

Explanation of rating scale:

For this rating tool, RELEVANCE is determined using the relevance rating scale employed by Lynn (1986). This scores items on a scale of 1 to 4 as outlined below:

1. The item is NOT RELEVANT to the aim of this study	Comments on score 1-3 will help me decide on the inclusion, exclusion or revision of a particular item. Please write your concerns about the clarity of the instruction's responses and options in this column
2. The item NEEDS MAJOR REVISION to be relevant to the aim of this study	
3. The item NEEDS MINOR REVISION to be relevant to the aim of this study	
4 The item is RELEVANT to the aim of the study	A score of 4 requires no comment

Example

Section	**Relevance rating**				**Comment**
Score	**1** **The item is NOT RELEVANT to the aim of this study**	**2** **The item needs MAJOR REVISION to be RELEVANT to the aim of this study**	**3** **The item needs MINOR REVISION to be RELEVANT to the aim of this study**	**4** **The item is RELEVANT to the aim of this study**	Comments on score 1-3 will help me decide on the inclusion, exclusion or revision of a particular item. A score of 4 requires no comment Please write your concerns about the clarity of the instructions responses and options in this column
A3	**X**				
B19		**X**			**The use of the word 'bones' is ambiguous: how will a woman know if it is bone or muscle pain**
C15			**X**		**C15a is not relevant**

The MAMMI (Maternal health And Maternal Morbidity in Ireland) Study

Content validity rating tool for Survey 2

The aim of the MAMMI study is to identify the existence, extent and prevalence of maternal morbidity in women having their first baby antenatally and at 3, 6, 9 and 12 months after birth.

The MAMMI study consists of FIVE surveys and will be administered to 1600 consenting nulliparous women on five occasions:
(1) Antenatally (at the booking visit); **(2)** at 3 months postpartum (postal); **(3)** at 6 months postpartum (postal); **(4)** at 9 months postpartum (postal) and **(5)** at 12 months postpartum (postal).

Content validity is concerned with the adequacy of coverage of the content being measured (Polit & Beck 2006).

This is the **content validity** rating tool for **Survey 2: THE THREE MONTH POSTNATAL** which will be issued to 1600 nulliparous recruited at their first booking visit. To be eligible to participate in the study women must be (i) ages 18 years or over and (ii) be able to read and understand English.

This document if designed to be read alongside **Survey 2: Three months postnatal survey** (green) of the MAMMI study.

I should be very grateful if you would:

i. **Review the instructions, responses and options for each item in the survey for clarity and write your concerns in the 'comment' column of this rating tool.**
ii. **Determine the** RELEVANCE **each item in this survey, that is, determine if the item and the response options are relevant to maternal health and maternal morbidity by rating it on a scale of 1-4 (as shown overleaf).**

Please indicate the relevance of each item by placing an X or √ in the box in the appropriate column. The item numbers in this document correspond to the items in **Survey 1** of the MAMMI study.

The last page of this document contains a section for you to write your comments on the completeness of the survey. Here, can you include comments on the overall style and presentation of the survey.

I realise that this is a lengthy process and am grateful for your time and efforts.

Thank you for your interest and support

Regards

Deirdre (Daly) Midwifery Doctoral Student

Explanation of rating scale:

For this rating tool, RELEVANCE is determined using the relevance rating scale employed by Lynn (1986). This scores items on a scale of 1 to 4 as outlined below:

1. The item is NOT RELEVANT to the aim of this study	Comments on score 1-3 will help me decide on the inclusion, exclusion or revision of a particular item. Please write your concerns about the clarity of the instruction's responses and options in this column
2. The item NEEDS MAJOR REVISION to be relevant to the aim of this study	
3. The item NEEDS MINOR REVISION to be relevant to the aim of this study	
4 The item is RELEVANT to the aim of the study	A score of 4 requires no comment

Example

Section	**Relevance rating**				**Comment**
Score	**1** **The item is NOT RELEVANT to the aim of this study**	**2** **The item needs MAJOR REVISION to be RELEVANT to the aim of this study**	**3** **The item needs MINOR REVISION to be RELEVANT to the aim of this study**	**4** **The item is RELEVANT to the aim of this study**	Comments on score 1-3 will help me decide on the inclusion, exclusion or revision of a particular item. A score of 4 requires no comment Please write your concerns about the clarity of the instructions responses and options in this column
A3	**X**				
B19		**X**			The use of the word 'bones' is ambiguous: how will a woman know if it is bone or muscle pain
C15			**X**		C15a is not relevant

Appendix 10: Table of content validity results

Expert number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Proportion rated as relevant (score 3 or more)	1.0	1.0	1.0	0.96	1.0	1.0	1.0	0.80	0.92	1.0	0.88	1.0	0.56	0.92	1.0	
Item content validity range																0.73-1.0 **(mean 0.93)**
Average scale content validity range*																0.92
Scale content validity index-universal agreement**																0.30

* 25 items were rated by 15 experts. Of the total of 375 items, 345 were rated as relevant (at 3 or 4 score)

**proportion of all items achieving agreement from all 15 experts (Polit et al. 2007)

mean CVI add all the CVIs and divide by number of items 23.33÷25=0.93

Item content validity I looked at CVIs provided by Dr Daly and the range was from 0.73-1.0

for average scale content validity index 100 ÷ 375 (x 345) = 92

** 12 out of 25 items received agreement by all 15 experts 100 ÷25 (x12) =30

Appendix 11: First interview schedule

Areas to be covered by the interview

1. Sexual relationship with partner prior to pregnancy and birth of first baby. Feelings and thoughts about own sexuality prior to pregnancy and birth.
2. Changes in sexual relationship since pregnancy and birth. Changes in definition, feelings and thoughts of own sexuality.
3. Support around these issues – from partner, from other people, from health professionals.
4. What resources / coping strategies were useful or would have been useful?

Opening questions – to put women at ease

1. Can you tell me what life was like prior to becoming pregnant?
   - ✓ In terms of the relationship in general with your partner?
   - ✓ In terms of the sexual relationship with your partner?
   - ✓ In terms of your own sexuality?

How did you feel about this?
How did you deal with this?

2. Can you tell me about resuming intimacy after the birth?

3. Were there changes you noticed in your relationship during pregnancy and after the birth?
   - ✓ In terms of the relationship in general with your partner?
   - ✓ In terms of the sexual relationship with your partner?
   - ✓ In terms of your own sexuality?

How did you feel about this?
How did you deal with this?

4. How do you feel now / what is happening now in relation to:
   - ✓ Your relationship in general with your partner?
   - ✓ Your sexual relationship with your partner?
   - ✓ In terms of your own sexuality?

What made a difference?
What could have made a difference? i.e., help seeking (talking to a health professional), knowing what others experience?

Some tips and advice from Hannah and Ellie

Where relationship issues do come up

- ➢ Can you tell me a bit about how this made you feel?
- ➢ Can you tell me a bit about how you and your partner dealt with this?
- ➢ What were the things that helped resolve the issue?
- ➢ What were the things that made it more difficult to resolve?
- ➢ If not resolved – what are the things that you feel may make a positive difference for you?

What are your thoughts and feelings now about these issues now after some time has passed?
Is there anything you feel could have been done differently at the time to change this?
If a new experience is disclosed revisit the questions

- ➢ Can you tell me a bit about how this made you feel?
- ➢ Can you tell me a bit about how you and your partner dealt with this?
- ➢ What were the things that helped resolve the issue?

- What were the things that made it more difficult to resolve?
- If not resolved – what are the things that you feel may make a positive difference for you?

In order to explore health service or help seeking behaviour

- Did you share these issues with anyone at the time?
- How did you feel when sharing the issue – ie, supported, alone, comfortable to talk, dismissed, cared for?
- What are the things that were suggested which really helped you and your partner?

Many women became upset at the loss of the shared intimacy they once had – Hannah often asked if there was anything they would do differently or anything they would advise first time mothers as a means of moving on.

Disclosure of abuse past or present
I will have information on support services with me to leave with women
I am sorry to hear that, as it is an awful and distressing thing to happen to you, do you want to talk about it?
Let them talk, listen, and reflect back.
Is there anymore you want to tell me about that?
Did you access support or have you spoken to a counsellor?
Do you want me to help you to access support or someone else you can talk to?
Mention my limits on confidentiality and my responsibility to protect children / other women.

Appendix 12: Final interview schedule

Areas to be covered by the interview

1. Sexual relationship with partner prior to pregnancy and birth of first baby. Feelings and thoughts about own sexuality prior to pregnancy and birth.
2. Changes in sexual relationship since pregnancy and birth. Changes in definition, feelings and thoughts of own sexuality.
3. Support around these issues – from partner, from other people, from health professionals.
4. Sexual activities.
5. What resources / coping strategies were useful or would have been useful?

Opening questions – to put women at ease

1. Can you tell me what life was like prior to becoming pregnant?

- ✓ In terms of the relationship in general with your partner?
- ✓ In terms of the sexual relationship with your partner?
- ✓ In terms of your own sexuality?

How did you feel about this?
How did you deal with this?

2. Can you tell me about resuming intimacy after the birth?

3. Were there changes you noticed in your relationship during pregnancy and after the birth?

- ✓ In terms of the relationship in general with your partner?
- ✓ In terms of the sexual relationship with your partner?
- ✓ In terms of your own sexuality?
- ✓ In terms of your sexual activities?

How did you feel about this?
How did you deal with this?

4. How do you feel now / what is happening now in relation to:

- ✓ Your relationship in general with your partner?
- ✓ Your sexual relationship with your partner?
- ✓ In terms of your own sexuality?
- ✓ In terms of your sexual activities?

What made a difference?
What could have made a difference? i.e., help seeking (talking to a health professional), knowing what others experience?

Some tips and advice from Hannah and Ellie
Where relationship issues do come up:

- ➢ Can you tell me a bit about how this made you feel?
- ➢ Can you tell me a bit about how you and your partner dealt with this?
- ➢ What were the things that helped resolve the issue?
- ➢ What were the things that made it more difficult to resolve?
- ➢ If not resolved – what are the things that you feel may make a positive difference for you?

What are your thoughts and feelings now about these issues now after some time has passed?
Is there anything you feel could have been done differently at the time to change this?
If a new experience is disclosed revisit the questions:

- Can you tell me a bit about how this made you feel?
- Can you tell me a bit about how you and your partner dealt with this?
- What were the things that helped resolve the issue?
- What were the things that made it more difficult to resolve?
- If not resolved – what are the things that you feel may make a positive difference for you?

In order to explore health service or help seeking behaviour

- Did you share these issues with anyone at the time?
- How did you feel when sharing the issue – ie, supported, alone, comfortable to talk, dismissed, cared for?
- What are the things that were suggested which really helped you and your partner?

Many women became upset at the loss of the shared intimacy they once had – Hannah often asked if there was anything they would do differently or anything they would advise first time mothers as a means of moving on.

Disclosure of abuse past or present
I will have information on support services with me to leave with women
I am sorry to hear that, as it is an awful and distressing thing to happen to you, do you want to talk about it?
Let them talk, listen, and reflect back.
Is there anymore you want to tell me about that?
Did you access support or have you spoken to a counsellor?
Do you want me to help you to access support or someone else you can talk to?
Mention my limits on confidentiality and my responsibility to protect children / other women.

Appendix 13: Consent form for Phase 1

CONSENT FORM

Research title: Maternal heath And Maternal Morbidity in Ireland (The MAMMI study)
Researcher: Deirdre Daly Tel: 087 1956441

DECLARATION by participant: Please tick (X or √) and provide your initials

1.	I have read the information booklet for this research study and I understand the contents.	**Yes [ ] No [ ] initials [ ]**
2.	I have had the opportunity to ask questions and all my questions have been answered to my satisfaction.	**Yes [ ] No [ ] initials [ ]**
3.	I fully understand that my participation is completely voluntary and that I am free to withdraw from the study at any time (prior to publication) without giving a reason and that this will not affect my care or the care that my baby receives in any way.	**Yes [ ] No [ ] initials [ ]**
4.	I agree that my medical records and those of my baby will be accessed by the research team for the purpose of this research.	**Yes [ ] No [ ] initials [ ]**
5.	I understand that I may be contacted by a member of the research team and requested to participate in an interview(s) on one or more topics covered by this research and I consent to this.	**Yes [ ] No [ ] initials [ ]**
6.	I understand that I will be given an opportunity to review the transcript of such an interview(s) to confirm accuracy.	**Yes [ ] No [ ] initials [ ]**
7.	I understand that the transcript will not identify me by name but will use the study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed.	**Yes [ ] No [ ] initials [ ]**
8.	I understand that information from this research will be published but that I will not be identified as a participant in this research in any publication.	**Yes [ ] No [ ] initials [ ]**
9.	I agree that information obtained from me in this research which has been coded so as not to identify me may be stored and used for the purpose of future research which will have obtained Research Ethics Committee approval without the need for further consent from myself.	**Yes [ ] No [ ] initials [ ]**

1

10. I understand that my personal details (name and address and other identifying information that links my identity to the study data) will be destroyed when this study is complete **unless** I have agreed to its retention after that date and to being contacted about future research. **Yes [ ] No [ ] initials [ ]**

11. I consent to my personal details being retained for a further period of 5 years after this study has been completed and used to invite me to participate in future research in accordance with this consent. **Yes [ ] No [ ] initials [ ]**

12. I consent to being contacted in the future regarding participation in research *relating to the topics covered by this research* which will have Research Ethics Committee approval. **Yes [ ] No [ ] initials [ ]**

13. I consent to being contacted in the future in relation to participation in research *unrelated to topics covered by this research* which will have Research Ethics Committee approval. **Yes [ ] No [ ] initials [ ]**

14. I understand that the researchers undertaking this research will hold in confidence and securely all collected data and other relevant information. **Yes [ ] No [ ] initials [ ]**

15. I freely and voluntarily consent to participating in this research study. **Yes [ ] No [ ] initials [ ]**

PARTICIPANT'S NAME ……………………………………………………………………………….

Contact Address………………………………………………………………………………………..

………………………………………………………………………………..

Phone number:…..…………………………………………. **Email:**……………………..………………..

Participant's signature: ………………………………………… **Date:** ………..…………………..

Name of person taking consent: …………………… Signature: ……………....Date:…………….

Researcher: ……………………………. Signature: ……………………………….. Date:……..……

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Appendix 14: Information booklet for Phase 1

Your invitation to join

The MAMMI Study

A study to find out more about the health and health problems of first-time mothers during pregnancy and during the first year after the baby's birth.

The MAMMI study has been approved by the Research Ethics Committees of the Rotunda Hospital Dublin and the Faculty of Health Sciences, Trinity College Dublin. MAMMI stands for **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland.

If you have any questions about this study, please contact researcher Deirdre Daly at 087 195 6441.

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Why have I been given this booklet?

You were given this booklet because you are having your first baby. This booklet tells you about the MAMMI study and what it means if you decide to take part.

What is the MAMMI study?

MAMMI stands for **M**aternal health **A**nd **M**aternal **M**orbidity in **I**reland. It is a study to look into the health and health problems of first-time mothers during pregnancy and during the year after the birth.

Why are you doing this study?

We want to find out:

- what health problems, if any, women experience during pregnancy and after the birth of their first baby;
- what health services, if any, pregnant women use; and
- how to improve women's health during and after pregnancy.

What sort of questions will you ask me?

We will ask you about:

- your general health and whether you have any medical conditions or have had any operations;
- any problems you have passing urine (water);
- any problems you have with your bowel movements such as soiling yourself or passing wind when you don't mean to;
- any problems or pain you may have during sex;
- your relationship with your partner and if you are worried about or experiencing violence in the home;
- how often you talk to a doctor, nurse or midwife about your health problems;
- your work or study; and
- the type of flat, apartment or house you live in.

Who else is taking part in this study?

We are inviting women, aged 18 and over, who are having their first baby to take part in the study. We are also asking women who may have had miscarriages or abortions to take part. Altogether, we are asking 1,600 women to take part.

What does taking part in the study mean for me?

We are asking you to complete **five** surveys. You should fill out the first survey (which came with this booklet) while you are pregnant. You complete the other four surveys at 3, 6, 9 and 12 months after you have given birth. We will post these surveys to you closer to the time. The surveys are also on the website, www.MAMMI.ie. Each survey takes about 45 minutes to complete.

If you have problems when you pass urine (water), we may invite you to talk to a midwife in confidence around six months after your baby's birth.

If you decide to take part in the study, we will ask you to:

- sign the consent form which came with this booklet;
- fill out the survey form that came with this booklet while you are pregnant;
- complete four surveys about your health and health problems at 3, 6, 9 and 12 months after your baby's birth; and
- agree to let the research team have access to your and your baby's medical records held by the Rotunda Hospital.

Are there any risks for me or my baby?

We do not see any risks with taking part in this study. However, if we find out during the study that a woman or her baby is being harmed or that there may have been a problem with the care a woman received, we must tell the Study Data Monitoring Group.

What is the Study Data Monitoring Group?

The Study Data Monitoring Group has been set up to:

- guide the research team;
- manage any problems that may arise during the study; and.
- deal with complaints.

If you raise a serious complaint, the group will discuss it. They won't know who you are. If they decide that your complaint should be brought up with midwives or medical regulatory authorities, they will ask your consent to share your personal details but can no longer protect your identity. The regulatory bodies need to know who they are representing.

The group is made up of senior staff from the Rotunda Hospital and Trinity College Dublin.

Are there any benefits for me or my baby?

The study will not benefit you personally. The information you give will be pooled with the information given by all the other women in the study. This will help us to better understand some of the health problems that women experience during pregnancy and after birth and what can be done to help them.

By taking part in the study you will be helping other mothers and their babies in the future.

Can anyone take part in the study?

To take part in the study you must be aged 18 or over and able to read and understand English.

How will you protect my personal information?

- We will keep all the information you give us private and confidential.
- We will give your survey information a unique number (a code). We will also remove your personal details from the first survey. This means that your answers will not be linked to your personal details.
- We will store your personal details and your code number securely and separately from the completed surveys. They will be kept in a locked cabinet, in a locked office in an area where few people have access.
- Paper copies of the information you give on the surveys will be identified by your code.

- We will keep an electronic version of the information you give us on a computer. Only the research team will have access to this information. We will use passwords, encryption (special software to scramble the information so it cannot be read) and anti-virus software to protect the information on the computer.

- If we do a face-to-face interview with you, we will record the interview. We will make a paper copy of the recording and show it to you so that you can confirm it is an accurate copy of the interview. We will then destroy the recording. We will use your code number to identify you on the paper copy. We will store the paper copy in a locked cabinet, in a locked office in an area to which few people have access.

- All members of the study team who have access to your information must sign a confidentiality agreement form.

- We will only disclose your personal details in **exceptional circumstances** for example if you or your baby is being harmed or you complain about the researchers (for more information see 'What is the Study Data Monitoring Group' on page 6).

What happens to the information at the end of the study?

We will publish the findings from the study and may give talks about the findings at healthcare conferences. It will not be possible to identify you or your answers in these publications or talks.

The information from the surveys may also be used in future research projects. However, the **researchers will not contact you unless you give your consent** to future contact. This is explained below.

What do the options on the consent form mean?

The consent form asks you to sign your name to show that you agree to take part in this study.

The consent form also asks you to agree to the following options:

- **Paragraph 5** lets you say if you want a member of the research team to call you after your baby's birth. If you say yes, they will contact you and invite you to take part in an interview.

- **Paragraph 9** lets you agree to information collected from you as part of this study being used for future research studies.

- **Paragraph 10** lets you say if you want your personal details such as your name and address to be destroyed after stage 1 of this research. If you say yes, the research team will not be able to contact you when this stage of the research is over.

- **Paragraph 11** lets you to agree to us keeping your personal details for five years after the end of the first stage of this research. If you say yes, the research team will contact you and invite you to take part in future studies.

Remember, **you do not have to agree to any of these options.** However, if you do agree, you will help us to continue our study of the health problems of pregnant women, mothers and their babies.

What do I do next?

1. Sign the consent form.
2. Keep a copy for yourself.
3. Post the original signed consent form and your completed survey form using the stamped address envelope that came with this booklet.

Can I leave the study?

Taking part in the study is voluntary. You can withdraw from the study at any time without giving a reason. This will not affect the care you or your baby receives.

How can I get in touch with you?

My name is Deirdre Daly and you can contact me on (087) 195 6441. Either myself, or Deirdre O'Malley, a midwife and member of the research team from Trinity College Dublin, will be in the antenatal clinics for most of the time during the study. We will be happy to answer any questions you may have.

You can also get information on our website, www.mammi.ie.

Appendix 15: Summary of re-categorised variables

Demographics

A number of demographic variables had several categories; for ease of reporting and more straightforward comparison to national statistics, variables were collapsed and re-categorised. This was carried out for; country of birth, education, employment and accommodation.

Participants who provided their country of birth were born in fifty different countries. This was condensed to region of birth to reflect similar reporting in the Perinatal Statistics Report (Health Service Executive 2014). Following this re-categorising a decision was made not to report ethnic background as sufficient information was obtained from region of birth.

Region of birth

Country of birth	Region of birth
Ireland	Irish
Poland	Europe (excluding Ireland and UK)
England	UK
France	America
Germany	Asia
Romania	Africa
Spain	Australia
Northern Ireland	New Zealand & other Oceania
Slovakia	
Italy	
Czech	
Scotland	
UK	
Lithuania	
Moldova	
US	
Brazil	
Hungary	
India	
Latvia	
Russia	
Argentina	
Australia	
Netherlands	
Portugal	
Canada	
China	
Denmark	
Malaysia	
Nigeria	

South Africa
Ukraine
Albania
Belgium
Bulgaria
Colombia
Croatia
Estonia
Hong Kong
Japan
Kuwait
Libya
Madagascar
Mexico
Paraguay
Rwanda
Slovenia
Soviet Union
Tanzania
Wales

Education

Original category	New category
Lower secondary Junior/Inter/Group Cert/ O levels/ GCSE, NCVA Foundation cert etc. Upper secondary Leaving Cert - applied and vocation progs., A Levels, NCVA level 1 etc.	School - second level
Completed apprenticeship, NCVA level 2/3, Teagasc cert, dip or equivalent Both upper secondary and technical or vocational qualification	Apprenticeship
National cert, diploma NCEA/ Institute of Technology or equivalent, Nursing Diploma	Certificate or diploma
Primary degree Professional qualification of degree status	Undergraduate degree
Postgraduate cert or diploma	Postgraduate cert or diploma
Postgraduate degree Masters Doctorate PhD	Postgraduate degree

Employment

Original category	New category
Full time paid work Part time paid work Casual paid work	Employed
Looking for first job Unemployed	Unemployed
Looking after home/family	Looking after family or home
Student or pupil Unable to work due to sickness/disability Unpaid voluntary work Other	Other

Accommodation

Original Category	New category
House - without mortgage Apartment - without mortgage	House/Apartment without a mortgage
House - with a mortgage Apartment - with a mortgage	House/Apartment with a mortgage
Rented house - privately rented Rented apartment - privately rented	Rented house/apartment - privately
Rented house - local authority Rented apartment - from local authority	Rented house/apartment - from local authority
Caravan / mobile home	Caravan / mobile home
Hostel accommodation	Hostel accommodation
Other	Other

Birth outcomes

Mode of birth

Original category	New category
Spontaneous vaginal birth	Spontaneous vaginal birth
Vacuum Kiwi	Vacuum
Forceps Kiwi & forceps Vacuum & forceps	Forceps
Elective CS	Elective CS

Elective CS in labour	
Emergency CS	Emergency CS

Perineal trauma

Original category	New category
Intact	Intact
1st degree no sutures 1st degree sutured	1st degree
2nd degree	2nd degree
3rd degree 4th degree	OASI
Episiotomy Episiotomy extended	Episiotomy
Labial tear Other	Labial/vaginal wall tears

Sexual health outcomes

Dyspareunia

A decision was made to combine the variables on dyspareunia. Painful penetration, pain during sexual intercourse or pain on orgasm were re-coded to 'experiencing pain during sexual intercourse' based on the definition of dyspareunia as 'the occurrence of pain during intercourse' (Binik 2005, 2010).

Dyspareunia

Original category	New category
Painful penetration Pain during sexual intercourse Pain on orgasm	Pain during sexual intercourse

Timing of resumption of sexual activity

Timing of resumption of sexual activity at three and six months were recoded into binary variables for regression analysis purposes.

Resumption of sexual activity three months postpartum

Original category	New category
Have not had any sexual activity	Have not had any sexual activity
5-8 weeks after the birth	During the first 3 months

9-12 weeks after the birth	

Resumption of sexual activity six months postpartum

Original category	New category
Have not had any sexual activity	Have not had any sexual activity
3-4 months after the birth	
4-5 months after the birth	During the first 6 months
5-6 months after the birth	

Frequency of sexual activity

Frequency of sexual activity was recoded into binary variables for regression analyses.

Frequency of sexual activity

Original category	New category
1-2 times per month	1-2 times per month
1-2 times per week	
3-4 times per week	1-2 time per week or more
More than 4 times a week	

Satisfaction with overall sexual life

Overall satisfaction with sexual life was recoded into binary variables for regression analyses.

Satisfaction with overall sexual life

Original category	New category
Very satisfied Moderately satisfied Equally satisfied/dissatisfied	Satisfied and equally satisfied/dissatisfied
Moderately dissatisfied Very dissatisfied	Dissatisfied

Appendix 16: Node summary from NVivo

Code book

Nodes

Name	Description
Being in 'coupled' relationship	Good and bad
Accepting partner	
Alone time as a couple	
Going away as a couple	
Nights out	
Bored of talk of sex	
Cultural issues	
Exhausted	This category includes the codes relating to tiredness. It is VERY relevent to intimacy after birth because several women talked about the need for sleep not sex. Im not sure but codes relating to arguments and rows might go in here too because a lot of women would have stated the tiredness left them cranky, leading to rows, and a sort of tiredness competition.
Causes of tiredness	
Consequences of tiredness	
How the tiredness felt	

Name	Description
Feeling angry or resentful	Mostly about tiredness, busyness and struggling adapting to new roles
Help seeking	Health professional and other supports, online, women, mother and baby groups etc
Advice I would give to others	
Being given advice	
Getting help	
Getting treatment for problems	
Health problems are normal	
Information sources	
Its all about the baby	
Mother in law	
Pelvic floor exercises	
Talking to health professionals	
Talking to therapist	
Talking with friends	
Talking with other mothers	

Name	Description
Talking with own mother	
Talking with sister	
What didn't help	
What would have helped	
I'm the CEO of the house	This category includes codes relating to managing the household and baby care issues. NOT very related to intimacy after birth and some of it overlaps with tiredness and arguments.
Acceptance of roles in the household	
Baby care	
Division of household chores	
Women doing the household chores	
Women making the sacrifices	
Importance of having sex with partner	The different issues that women bring up when discussing how important sex is their relationship. For some very important, others not as much
Journey to getting pregnant	This category includes statements women made about their pregnancy being planned, taking longer or shorter than they anticipated and experiencing fertility treatment. I have included miscarriage here, as several women experienced a miscarriage either before their 1st or 2nd pregnancy - this impacted on their sexual lives during pregnancy NOT necessarily on postpartum intimacy. 2 women had a termination years previously with a different partner,

Name	Description
Abortion	
Finding out about pregnancy	
Getting pregnant	
Infertility	
Miscarriage	
Planned pregnancy	
Unplanned pregnancy	
Life before baby - in general	Work, social life, living arrangements etc
Living situation	married, living together etc
Living together	
Living with parents or parents in law	
Married	
Not married	
Motherhood is really hard	Women wanted to talk about adapting to motherhood. DOES relate to intimacy after birth in so much as these struggles impacted on communication, time and desire to be around partner. Not all bad though, 'life after baby' includes some positive elements. I'm included breastfeeding here too, women who

Name	Description
	described their breastfeeding experiences usually described struggles, some however talked about change in function of breasts from sexual to functional
Breastfeeding	
Change to the relationship	
Everything changes	
Feeling anxious	
Feeling depressed or down	
Feeling frustrated	
Feeling isolated	
Feeling sad or lonely	
Giving up work	
Life after baby in general terms	
Maternity leave	
Motherhood is hard	
Not enough time for each other	
Prepared for motherhood	

Name	Description
Returning to work	
My (new) body	This is more than women's perception of their body image or how they think their partners feel about their, but also reflects comments that women made about accepting their new body, having control over their body and confidence in their body. Women who accepted their new body and expressed a sense of empowerment in what their body had done tended to speak more positively and confidently about resuming sex, having sex and the importance of sex in their relationship.
Accepting body	
Body image issues	For the moment throwing everything in. this could be a higher order category
Compliments	
Exercise	Pre-pregnancy, after pregnancy or now
Feeling attractive	
Self esteem	
Confidence in body	
Control over body	
Feeling fit	
Negative body image	
Not feeling attractive	

Name	Description
Partners perception of body	
Positive body image	
Pressure on self	Guilt about not being super mum, sex goddess, skinny and looking like the women in magazines. Guilt about not wanting sex or turning sex down too. That section is coded in sexual desire too
Partner and family support	Practical and emotional support
Support from partner or lack of	
Talking to partner	
Partners work	
Paternity leave	
Physical aspect of sexual activity (post birth)	My thinking is to separate out sex and intimacy. So by populating this with all the nodes on sex, oral sex, masturbation. Then I'm left with the intimacy.
Air during sex	
Anal sex	
Frequency of sexual activity	Pre pregnancy, post pregnancy and now
Oral sex	
Partners sexual issues	

Name	Description
Positions during sex	
Problems with orgasm	
Sex after baby	
Sex feels different	
Sex feels the same	
Physical change post birth	I'm including birth injury, pain vaginal tightness here. It may join up with 'physical aspect of sex' at a later point
Accepting issues	
Birth injury	
Faecal incontinence	
Is CS better	
Lack of vaginal tone	
Pain during sex	Or no pain?
Surgery	
Urinary incontinence	
Using lubrication during sex	

Name	Description
Vaginal dryness	
Vaginal tightness	
Resuming sex	Everything, from timing, motivation, how it felt, regret etc
Expectation of resuming sex	
Reasons for not resuming sex	
Resuming sex because partner wants to	
Resuming sex for me	
Timing of resuming sex	
Sex before pregnancy	sexual activities, satisfaction with sexual life, frequency
Not enjoying being pregnant	
Using sex toys	
Sex during pregnancy	For the moment I'll throw the kitchen sink in here. Good sex, bad sex. no sex. anything to do with sex before. I can tease it out after
Partner didn’t like bump	
Partner didn’t want sex	

Name	Description
Sex while pregnant	
Sexual desire	The woman's and her partner, change in desire. impact of change on relationship
Instigating or initiating sex	
Not wanting sex	
Sexual desire - woman	
Sexual desire male	
Shift in attention	From giving attention to partner to baby
Showing affection	This category includes statements made by women about being affectionate with their partner. DOES relate to intimacy after birth as a couple of women associated these demonstrations of affection leading to wanted or unwanted sexual activity.
Cuddling	
Dont touch me	
Holding hands	
Hugging	
Kissing	
Sleeping together	

Name	Description
Sick baby or child	
Something for me	Alone time, or time away from baby and partner (not exercise)
Alone time	
Being involved in this research	
Pass times	Hobbies and interests before pregnancy
The Future - baby, couple	
Future of relationship	What the future holds, plans
Going away as a family	
Grateful for what we have	
We used never row	This category is made up of codes relating to arguements. SOMEWHAT related to intimacy after birth. I think it may get put in a higher order categroy with tiredness because tiredness let to most of the arguments. Some childcare issues, adapting to new roles, division of household chores, presence of other family members adding stress also source of arguments. But a lot of tiredness Maybe higher order category relating to adapting to motherhood? Not sure yet
Behaviour during arguments	
Causes of arguments	
Feelings during arguments	

Name	Description
History of arguments	
Result of arguments	
When we have sex now	Frequency, motivation, how it feels, satisfaction etc
Having sex cause havent done it in ages	
Reasons for havin or not having sex	
Sex for partner	
Sex life not great	
Sex now	
Who am I now - mother housekeeper wife sex siren	This category has developed from statements women made regarding a loss of independence, financially or emotionally. Trying to find her new place - is it mum mode?
Dependence on partner	
Feeling like myself	
Life is over	
Loss of me	
Money issues or not	

Name	Description
New me - Mum mode	
Not feeling like myself	
Not going to change me	
Wishful thinking	
Regrets or no regrets	

Nodes\\Categories

Bringing codes together

Appendix 17: Excerpts from memos

Sample of memos keep during data analysis

13th May 2016

Interview 3

Communicating with her partner has come up a lot in this interview. More so poor communication in relation to several aspects of their lives: baby care, tiredness, household chores, money, lack of sexual desire and sexual satisfaction. I think several codes will be used here; talking to partner, support from partner, impact of tiredness, not wanting sex and sex life not great.

I need to be careful that I don't get caught up in the challenges women felt adapting to motherhood. I plan to code everything, even what is not directly relevant to my aim and objective, for example, isolation on maternity leave. These other codes could easily contribute to the discussion on adapting to motherhood but may not fit into my study. I'll know more as I go on.

17th June 2016,

Interview 6

This woman is struggling. Feeling inadequate as a mother, struggling to find her identity since deciding to stay at home, guilty about her increase in weight, guilty about the lack of sex in their relationship, guilty that doesn't want to go out, guilty that she wears a tracksuit and tea-shirt all day. Not sure where to code all this guilt.

Adapting to motherhood issues – motherhood is hard

Weight, clothing – negative body image

Lack of sex – sex now? Sex has changed? But that doesn't take into account the guilt that has been described in relation to her changed interest in sex and her sexual desire.

22nd July 2016

Interview 13

This woman really adds to the discussion on intimacy and sex. Very descriptive in terms of holding hand, kissing and cuddling. They did before the baby and they continue to do so after (see nodes on 'hugging' 'holding hands' 'cuddling' and 'kissing') She clearly sees this as being very important, like it is reassuring to her that this part of their lives has not changed. Probably put these together, maybe non-sexual intimacy?

Sex is different. Lots of statements about sex before getting pregnant and how it has changed since baby. This woman is certain that while sex is important in their relationship but she finds the acts of affection between them more important now they are under pressure with childcare, home and work. Think about this – is sex as a part of intimacy still as important?

Update 20th Aug 2018

'why intimacy is important'

Change of plan, putting these together as 'showing affection'. Probably to be used in 'why intimacy is important'

This subtheme includes statements made by women about being affectionate with their partner (kissing, holding hands, cuddling, snuggling together, hair brushing, arm rubs etc).

Don't want to call non-sexual as sometimes these close moments do lead to sexual activity.

Update 15th September 2016
Two women clearly avoiding hugs and kisses. In their eyes hugs, kisses and compliments were a means of initiating sexual intercourse. So rather than sit beside their partner and snuggle in they seem to withdraw. I'm not sure where this will fit in the subthemes, as everyone else had positive experiences of affection with their partner. Maybe it goes in with 'why intimacy is important' but as a contraction to other women, or is it a challenge to intimacy that these two women are experiencing?

19th August 2016
Interview 16
How does perception of body image impact on intimacy? Why do some women accept their new lumps and bumps as markers of what their body had achieved? In its simplest code – 'positive body image' compared to 'negative body image' for those that hide their body and turn off the lights.
Some of this data relates to feeling attractive, related to body image but different, likely these will come together under a subtheme.

Think back to interview 6, she went to lengths to avoid her partner seeing her body. She also described avoiding sexual activity.

4th July 2016
'*sources of information'*
I need to go back and do a search for 'google', 'online' and 'internet'. I'm pretty sure other women have mentioned internet when talking about getting information on vaginal dryness and dyspareunia.
This looks like it going to be part of help seeking behaviour one that does not involve a healthcare professional. Women are left to source their own information rather than it being offered to them.

10th July 2016
'sexual activity'
Women seem to be engaging in one type of sexual activity with their partner, penile penetrative sexual intercourse. When I bring up oral sex, anal sex, masturbation and sex toys only three women so far have been able to say that they do or did that. Nobody seems to want to talk about masturbation.

30th July
'tiredness'
Women are describing extreme tiredness. I have coded everything to do with tiredness under the one code 'tiredness' but it's getting very big and unwieldy. I need to go back and recode: 'causes of tiredness', 'how tiredness felt' and 'consequences of tiredness'.
I need to take care not to get caught up in all the consequences of tiredness, such as, arguments and adapting to motherhood.

5th August 2016
'breastfeeding'
Leaking milk, breasts growing and shrinking, nutrition for the baby, breasts belonging to the baby, all of these have been identified by breastfeeding women so far. All of these have been coded under 'breastfeeding' for the moment; this includes the challenges with breastfeeding in general but more specifically for now, the issues relating to intimacy and breastfeeding.

I have left vaginal dryness as a separate code because it includes how women managed vaginal dryness. There is some data here that is coded twice for ‘breastfeeding’ and ‘vaginal dryness’

Note that most got the information on vaginal dryness online. Data coded twice: ‘vaginal dryness’ and ‘sources of information’

10th August 2016

‘resuming sexual activity’

Here again it’s all about sexual intercourse, even those with dyspareunia do not appear to do other things that don’t involve penetration. Every women talked about resuming sexual activity; reasons for, timing, planning for it, feeling apprehensive and fearful of how it would feel.

This sub theme may well turn out to be a theme in its own right, I’m not sure if can be merged into or with something else or needs to be. I just need to be clear that the data on ‘sex now’ is different from ‘resuming sex’ as women were inclined to jump from one to the other quickly. Particularly when they describe how it felt that first time and how it feels now. I’ve coded large chunks of text here, but I think it’s worth going back and tightening up.

17th August 2016

‘baby comes first’

I have coded some of the support women had under ‘baby comes first’ as that is the perception of women, that their health and well-being is secondary to the baby.

I also have data on how the baby comes first for the woman in terms of she only has space emotionally for her baby not her partner.

I need to recode – the data relating to postnatal care being baby focused

21st September 2016

‘help seeking behaviour’

I had this notion that help seeking was going to be a really big part of the findings but at this point I can see that women sought help for everything but sexual health. Most of the data coded so far in help seeking (the subtheme) is in relation to other issues like urinary incontinence, faecal incontinence. There is very little data on women going to their GP or a physio for sexual health problems experienced. Well, they are not help seeking from healthcare professional, they are however going online and talking to other women.

Appendix 18: Examples of One Sheet of Paper

Exercise more than how I looked

more comfortable or just don't care.

stretch marks

is it me - is it my body

I'm comfortable - I don't have to prove myself

weight.

Don't like the way I look - stretched, belly saggy

wear my bikini.

pressure from other women

feeling attractive

pressure weight watchers.

getting older - body changes

leaky boobs - belly - "where to put his hands"

acceptance - I've had 2 babies - I love dinner

Never felt he didn't fancy me.

tired looking - puffy eyes.

breasts changed but nourished 2 babies

tv magazines - perfect picture

Perception of body image & impact on intimacy

functionality of body - the priority - baby sick

compliments

exercise

got my body back

self-conscious (u.i.)

my body is amazing

no proud of it.

scars

positive & appreciative - other women all done up - their confidence

challenge body - let down by body

lights off

old maid a milk cow

"wedding"

body failure new body

"you haven't put on weight"

I know he's attracted to me

body shaming in society

good self esteem

Motivation for exercise - or weight loss

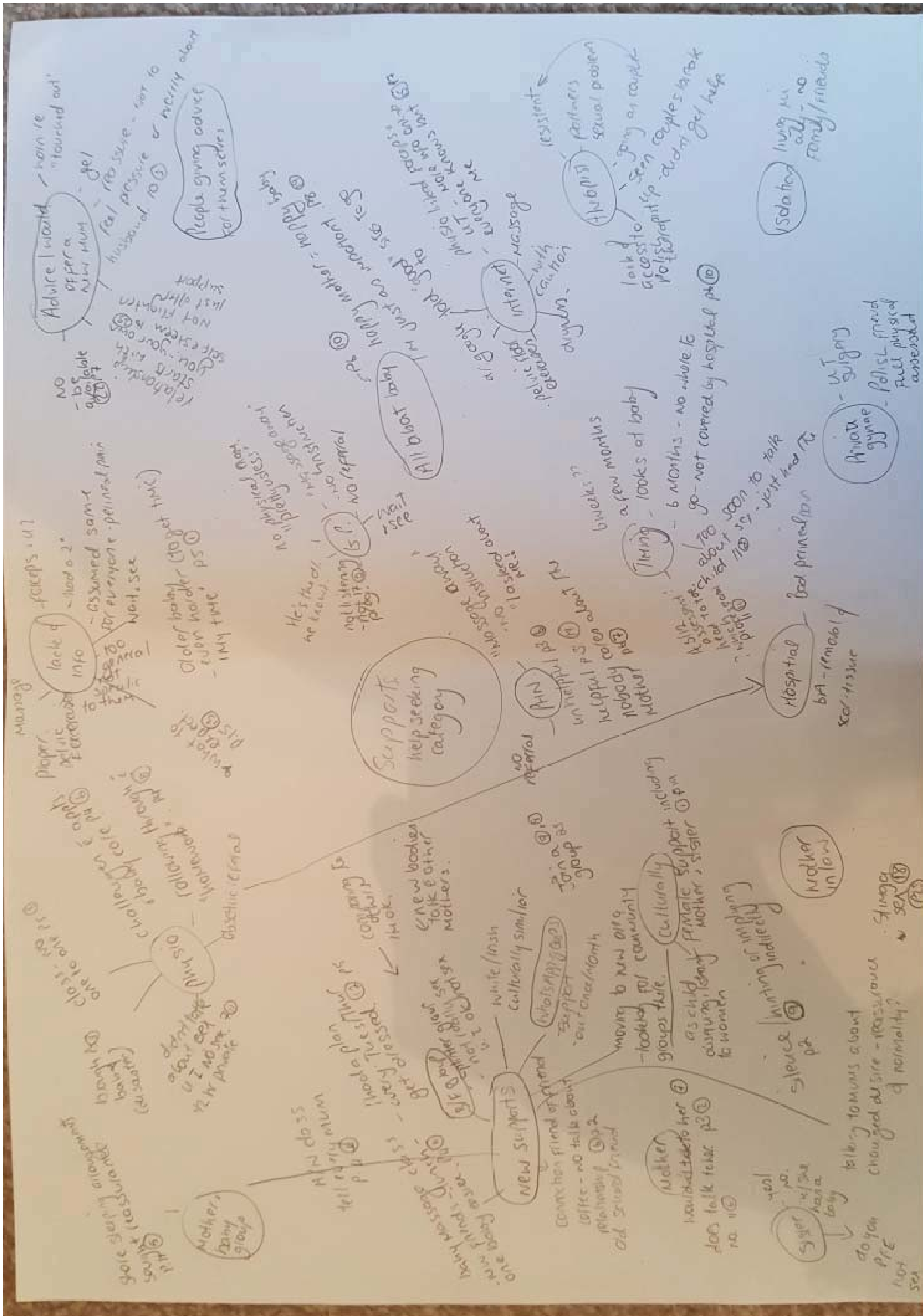
great value on compliments from partner.

people around me cared more - people I don't know commenting "hurt".

compliments

partners negative commentary on fat people.

NO.20 p.9



Appendix 19: Excerpts from reflective diary

20th May 2016
Interview 4

Interview in hotel lobby.
This women was not born in Ireland, she talk so openly and clearly about her sexual relationship, no euphemisms, no need to ease into the conversation. She was very clear about the purpose of the interview and got straight into a conversation about how her sex life had changed. She seemed angry initially, angry with her partner that he seemed not to be aware that everything had changed. As the interview progressed, she sort of slowed down, a sadness appeared, a sadness that engaging in sexual activity with her partner had changed so much.

2nd June 2016, post interview
Interview 6

She got upset several times, it really took all my strength to not to move closer to her and offer some reassuring words.
I felt that I was the first person she spoke to about how motherhood had impacted on her. She seemed very lost in relation to her identity. Deciding to stay at home, the loss of financial independence and loss of identity associated with it are very obvious.

8th June 2016
Reflection on interviews and coding so far
I am quite conscious of my own bump in interviews, I am clearly pregnant. So far it has come up at the end or after the interview but I've decided to address it at the outset and tell them this is my second pregnancy and I have a little boy at home. I don't think them wondering if I am pregnant or not has influenced interviews so far but I also don't want them to hold back for my benefit either because we do talk about advice they might give their friend or sister about sexual health after birth.

27th July 2016
Interview 12
The response this lady received from her PHN in relation to her faecal incontinence is quite shocking. This lady had a terrible story about getting help for her faecal incontinence I think I need to be careful that I don't get caught up in this part of her story. She needed to tell me. She also has a lot to say about her sexual health, resuming sexual intercourse (early), how that felt, her motivation for sexual activity (her pleasure or her partners?).

I will code everything. But can't lose sight of the sexual health experience.

15th August 2016
Interview 18th

The perceived norm of the male partner being the initiator of sexual activity is not evident in this relationship. Her partner has a long history of impotence. Getting to a place where sex was not a problem has taken years. It seems to be on her terms, something she initially struggled with but counselling seems to have resolved. Where is this going to fit, as it's not postpartum sexual health. New code, see if others have had a similar experience and I might get a better idea of where it fits in my study if at all.

21st August 2016

Reflection on interviews and coding so far

The breastfeeding support, advice and information that women have received is pretty appalling. As a midwife I am struggling with this, we promote breast as best to the point of obsession and then we leave women high and dry with no practical support and a serious lack of information.

Every breastfeeding mother interviewed so far has experienced vaginal dryness and nobody advised them of this possibility. Most went ahead with their first sexual intercourse without the benefit of using lubricants. Only when they search online did they find this crucial piece of information to their sexual health. It feels quite damning to the midwifery profession that we don't address this early on in promoting breastfeeding.

Appendix 20: Ethical approval from Faculty of Health Sciences Ethics Committee (Trinity College Dublin)

COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH

Dámh na nEolaíochtaí Slaínte,
Foirgneamh na Ceimice
Colaiste na Tríonóide,
Baile Átha Cliath 2, Éire.

TRINITY COLLEGE DUBLIN

Faculty of Health Sciences,
Chemistry Building,
Trinity College,
Dublin 2, Ireland.
T:- +353 (0)1 8964255

Ms.Deirdre O'Malley,
School of Nursing and Midwifery,
Trinity College Dublin,
24 D'Olier St,
Dublin 2

22nd October 2013

Re: MATERNAL HEALTH AND MATERNAL MORBIDITY IN IRELAND (MAMMI) – SEXUAL HEALTH STRAND

Dear Applicant(s)

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in September 2013, we are pleased to inform you that the above project (as amended) has been approved without further audit.

Yours sincerely,

pp. Sonya mc Cannon

__ ______________________________
Dr. Ruth Pilkington
Chairperson
Faculty Research Ethics Committee

Appendix 21: Ethical approval from the Rotunda Hospital Ethics committee

Parnell St • Dublin 1
Tel: 01 - 817 1700 • www.rotunda.ie

DR SAM COULTER-SMITH
MASTER

3rd October, 2011.

Ms. Deirdre Daly,
Lecturer in Midwifery/Research Fellow,
School of Nursing & Midwifery,
24 D'Olier Street,
Dublin 2.

Re: The MAMMI Study (Maternal health And Maternal Morbidity in Ireland)

Dear Deirdre,

Just a note to confirm that the Research Ethics Committee of the Hospital are now happy for you to commence the above study. We wish you well with this work.

Kind regards.

Yours sincerely,

Mike

Dr. Michael Geary.
Chairman.
Research Ethics Committee.

Not for prescription purposes

• Tel: 01 - 817 1731 • Fax: 01 - 873 0932
• email: masterssecretary@rotunda.ie

THE UNIVERSITY OF DUBLIN

TRINITY COLLEGE

SCHOOL OF MEDICINE

FACULTY OF HEALTH SCIENCES

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Professor Dermot Kelleher, MD, FRCPI, FRCP, F Med Sci
Head of School of Medicine
Vice Provost for Medical Affairs

Ms Fedelma McNamara
School Administrator

email: medschadmin@tcd.ie

Ms Deirdre Daly
School of Nursing and Midwifery,
Trinity College Dublin,
24 D'Olier Street,
Dublin 2.

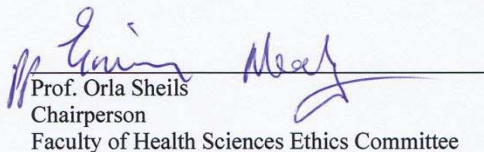
Monday, 16th May, 2011

Study: Maternal health and Maternal Morbidity in Ireland (The MAMMI study)

Dear Applicant (s),

Further to a meeting of the Faculty of Health Sciences Ethics Committee held in September 2010, we are pleased to inform you that the above project has been approved without further audit.

Yours sincerely



Prof. Orla Sheils
Chairperson
Faculty of Health Sciences Ethics Committee

Cc Professor Cecily Begley, Professor Mike Clarke
School of Nursing and Midwifery,
Trinity College Dublin,
24 D'Olier Street,
Dublin 2.

Schools of the Faculty: Medicine, Dental Science, Nursing and Midwifery, Pharmacy and Pharmaceutical Sciences

Appendix 22: Letter of invitation accompanying postnatal surveys

COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH | TRINITY COLLEGE DUBLIN
Ollscoil Átha Cliath | The University of Dublin

School of Nursing and Midwifery
Trinity College Dublin
2 Clare Street
Dublin 2

1st July 2013

Dear

The MAMMI Study

We do hope you and your family are healthy and well since the birth of your baby.

Once again, many thanks for agreeing to take part in the MAMMI study; we really do appreciate your participation.

We are now enclosing the 2nd MAMMI study survey which should be completed now, 3 months after you gave birth. We are also enclosing a FREEPOST addressed envelope for returning the survey.

If you do not wish to continue in the study, you know you are free to withdraw without giving a reason. If you do decide to withdraw from the study, perhaps you can let us know and we will respect your wishes and ensure that you receive no further correspondence.

We do hope you will take the time to complete the survey, which takes about 30-45 minutes to complete depending on how much detail you want to write.

Please feel free to call us on 087 1956441, or text us and we will call you back, if you have any questions or queries.

We really do hope you are healthy and well and we wish you and your family good health and happiness. We look forward to receiving your survey.

Yours sincerely,

The MAMMI Study Team

Telephone: 087 1956441
Email: contact@mammi.ie

The MAMMI Study team members are:
Professor Cecily Begley & Professor Mike Clarke, Principal Investigators
Dr Deirdre Daly, Associate Professor,
Deirdre O Malley, PhD student, HRB Research Fellow,
Francesca Wuytack, PhD student, Sunita Panda, PhD student and Jamile Marchi, PhD Student

Appendix 23: Contact details of local services if abuse disclosed during interviews

Rape Crisis Centre Dublin 1800 77 88 88

National Counselling Service HSE

HSE Dublin North East (North Dublin & Meath) 1800 234 110

HSE Dublin North East ((Navan, Cavan, Louth & Monaghan) 1800 234 117

HSE Dublin Mid-Leinster (South Dublin, East Wicklow) 1800 234 111

HSE Dublin Mid-Leinster (West Dublin, West Wicklow & Kildare) 1800 234 112

HSE Dublin Mid-Leinster (Laois, Offaly, Longford & Westmeath) 1800 234 113

One in Four 01 6624070, info@oneinfour.ie

Women's Aid Dublin 1800 341 900

Appendix 24: Information leaflet for Phase 2

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

The MAMMI Study

INFORMATION LEAFLET FOR PARTICIPANTS: Maternal health And Maternal Morbidity in Ireland (MAMMI) Study – Sexual Health Strand

My name is Deirdre O'Malley, I am a midwife, a researcher on the MAMMI study and a registered PhD candidate in Trinity College Dublin.

1. What the study is about?

This study has been developed in response to the interest shown in issues around sexual health in the analysis of the surveys completed by women in the MAMMI study.
This study aims to explore women's experiences of their sexual health after the birth of their first baby, the impact of this on their lives and to find out what services were available and used by women seeking help for these issues.

2. Who can take part?

To be able to take part you have to speak fluent English.

3. What does the study involve? What will you be asked to do?

If you choose to take participate in the study, I will arrange with you a time and place for an interview that is convenient to you. During the interview I will ask you open questions about how pregnancy and birth may have affected your intimate and sexual relationship with your partner. You do not have to answer every question I ask and you can add anything you feel is important. The length of the interview may vary but is estimated to be 45- 60 minutes on average.

4. Location of research

The interview will take place somewhere that is convenient for you, for example, your home or a room in Trinity College Dublin.

5. What will happen to the results of the study?

You will receive a summary of the results. The information you and all the other women provide will be of interest to all those concerned with the health and wellbeing of women during pregnancy and after birth, including women and health professionals. For this reason the findings from the study will be presented and published. I will be very careful to make sure it will not be possible to identify any woman individually in these presentations and publications.

6. Potential Benefits of the study

By taking part in this study you will help increase our understanding of women's sexual health after birth, any sexual health issues experienced and how women have coped with these issues. The research study is unlikely to benefit you individually, but it is hoped that the information you and all the other women provide will supply knowledge to improve care for mothers in the future.

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

The MAMMI Study

7. Potential Risks of the study
There is no physical risk of harm related to this study. Everything possible will be done to make sure you feel comfortable discussing this personal topic.

8. Exclusion from participation
The interview will be carried out in English, unfortunately I do not have funding for a translator. If you do not feel confident in speaking and understanding English it will not be possible for me to interview you.

9. Confidentiality
Your identity will remain confidential at all times. Your name will not be published and will not be disclosed to anyone. A number instead of your name will be used and your personal details will be stored securely and separately from the interview recordings and transcripts. After the study has been completed the recordings and transcripts of the recordings will be kept securely for 5 years and then destroyed permanently. In addition, all information collected will always be stored securely (in a locked cabinet or secured hard disk) in a locked room.

9.1 Limit on Confidentiality
While I will maintain your confidentiality, it is important that I tell you that there are some occasions that I am legally and professionally obliged to disclose information. If during the course of the interview you disclose an issue; of bad practice, a crime, sexual abuse; in the interest of protecting you, other children or other women I have an obligation to report this to the appropriate authorities. This is the only occasion where there is a limit to your confidentiality.

10. Voluntary Participation
If you decide to participate in this study, you may withdraw at any time by phoning, texting or emailing me.

11. Permission
This study has been approved by the Ethics committee of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Further information: *You can get more information or answers to your questions about the study, your participation in the study, and your rights, at any point.* My name is *Deirdre O'Malley and I can be contacted at 087 1956441 or omalled1@tcd.ie*

The Primary Investigator of the MAMMI study is Dr Deirdre Daly, 01 8962604 or email dalyd8@tcd.ie
If you would like to speak to my research supervisor, please feel free to contact Professor Agnes Higgins on 01 8963703 or email ahiggin@tcd.ie

Appendix 25: Consent form for Phase 2

CONSENT FORM for interview

Research title: Maternal health And Maternal Morbidity in Ireland (The MAMMI study) – Sexual Health Strand

Researcher: **Deirdre O'Malley Tel: 087 1956441**

DECLARATION by participant: Please mark (x or ✓) and provide your initials				
1.	I have read the information booklet for this research study and I understand the contents.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
2.	I have had the opportunity to ask questions and all my questions have been answered to my satisfaction.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
3.	I fully understand that my participation is completely voluntary and that I am free to withdraw from the study and this interview at any time (prior to publication) without giving a reason and that this will not affect my care or the care that my baby receives in any way.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
4.	I understand that I will be given an opportunity to review the transcript from this interview to confirm accuracy.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
5.	I understand that the transcript will not identify me by name but will use the study code and that the original digital recording will be erased once the accuracy of the transcript has been confirmed.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
6.	I understand that the information from this research and this interview will be published but that I will not be identified as a participant in this research in any publication.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
7.	I agree that information obtained from me in this research and this interview; which has been coded so as not to identify me, may be stored and used for the purpose of future research which will have obtained research Ethics Committee approval without the need for further consent from myself.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
8.	I understand that my personal details (name and address and other identifying information that links me to the study data) will be destroyed when this study is complete unless I have agreed to its retention after that date and to being contacted about future research.	**Yes [ ]**	**No [ ]**	**Initials [ ]**
9.	I understand that I may be contacted by a member of the research team and requested to participate in an additional interview(s) on more topics covered by this research and I consent to this.	**Yes [ ]**	**No [ ]**	**Initials [ ]**

PTO

10. I freely and voluntarily consent to participating in this interview. **Yes [ ] No [ ] Initials [ ]**

PARTICIPANT'S NAME: ______________________________

Contact Address: ______________________________

____

____

Phone number: ______________ **Email:** ______________

Participant's signature: ______________________ **Date:** __________

Researcher: ______________ **Signature:** ______________ **Date:** __________

One copy of this form must be retained by the participant and one copy must be retained by the researcher

Appendix 26: Prevalence of postpartum sexual health issues when 101 women who were pregnant again were removed from analysis

Sexual health issue	Pre pregnancy n (%)	101 women* removed n (%)	Early pregnancy n (%)	101 women* removed n (%)	3 months pp n (%)	101 women* removed n (%)	6 months pp n (%)	101 women* removed n (%)	9 months pp n (%)	101 women* removed n (%)	12 months pp n (%)	101 women* removed n (%)
Lack of vaginal lubrication	241/658 (36.6)	213/574 (37.1)	167/658 (25.4)	147/574 (25.6)	298/658 (45.3)	259/574 (45.1)	283/658 (43)	252/574 (43.9)	245/658 (37.2)	225/574 (39.2)	233/658 (35.4)	213/574 (37.1)
Dyspareunia	184/629 (29.3)	165/550 (30)	155/629 (24.6)	138/550 (25.1)	339/629 (53.9)	300/550 (54.5)	236/629 (37.5)	209/550 (38)	186/629 (29.6)	169/550 (30.7)	129/629 (20.5)	116/550 (21.1)
Difficulty reaching orgasm	203/596 (34.1)	172/519 (33.2)	156/596 (26.2)	137/519 (26.4)	151/596 (25.3)	129/519 (24.9)	183/596 (30.7)	159/519 (30.6)	148/596 (24.8)	128/519 (24.7)	140/596 (23.5)	124/519 (23.9)
Unable to reach orgasm	114/578 (19.7)	94/506 (18.6)	98/578 (17)	85/506 (16.8)	88/578 (15.2)	78/506 (15.4)	90/578 (15.6)	77/506 (15.2)	85/578 (14.7)	72/506 (14.2)	80/578 (13.8)	69/506 (13.6)
Vaginal tightness	138/616 (22.4)	121/537 (22.5)	130/616 (21.1)	115/537 (21.4)	237/616 (38.5)	210/537 (39.1)	200/616 (32.5)	175/537 (32.6)	145/616 (23.5)	131/537 (24.4)	107/616 (17.4)	99/537 (18.4)
Vaginal looseness / lack of muscle tone	10/589 (1.7)	10/513 (1.9)	10/589 (1.7)	10/513 (1.9)	89/589 (15.1)	78/513 (15.2)	79/589 (13.4)	70/513 (13.6)	58/589 (9.8)	51/513 (9.9)	53/589 (9)	49/513 (9.6)
Loss of interest in sex compared with before pregnancy	216/654 (33)	172/531 (32.5)	349/654 (53.4)	272/531 (51.6)	306/654 (46.8)	239/531 (45.4)	303/654 (46.3)	242/531 (45.6)	273/654 (41.7)	221/531 (41.6)	260/654 (39.8)	208/531 (39.1)

*101 women pregnant again at twelve months removed from analysis in order to compare prevalence rates of sexual health issues

Appendix 27: Additional interview extracts removed during editing and a record of women's extracts were used for each theme

<table>
<tr><th></th><th>Record of extracts removed and evidence of use of all women’s extracts in presenting qualitative findings (Chapter 5)</th></tr>
<tr><td></td><td>5.2 Intimacy and sexual activity: important aspects of a couple’s relationship
5.2.1 Kisses, hugs and cuddles as a form of intimacy</td></tr>
<tr><td>Extracts kept from:</td><td>Caroline, Leila, Rose, Fiona, Fabienne, Colette, Agnieszka, Niamh, Joanna</td></tr>
<tr><td>Extracts removed</td><td>Yeah, always when he [partner] comes in from work in the evening, first thing, it’s straight to me for a kiss and a hug and then to the two kids. And if he forgets to do it I’d be like ‘hello’, you know, I would give out a little bit about that. But yeah, no, we’d be very affectionate, yeah. (Nyree)

Yeah, yeah, when I come home from work or if we are walking around here or walking in town I'd link Sam and then he’d be more affectionate than me, I think, because he’d be hugging me and kissing me and stuff like that. I'd give it back but I wouldn't go to him and do that. He’d be always doing it to me. He’s more feely than me, touchy-feely like. (Jenny)

Oh yeah, yeah, definitely, yeah, I mean cuddles on the couch every night kind of thing, holding hands on holidays and, yeah, we do, we definitely do, and it’s always like kiss goodbye first thing in the morning and everything, and last thing at night, so we would be quite malleable like that, not, not PDAs [public displays of affection] all over the shop, but do you know what I mean like, we’re, yeah, we’re very close like. (Colette)

And still even now while we haven’t had sex we’d still be very affectionate and we’d always have cuddles and stuff before we’d go to sleep. If we are both in bed at the same time, whispering to not wake you up [talking to baby…] (Caroline)</td></tr>
<tr><td></td><td>5.2.2 Sexual activity as a form of intimacy</td></tr>
<tr><td>Extracts kept from</td><td>Vicky, Colette, Nyree, Aoibhe, Anna, Jane, Orla, Fiona, Agnizeska, Sarah, Joanna</td></tr>
<tr><td>Extracts removed</td><td>Yeah, I do anyway, yeah. Ah we do [think sexual activity is important in our relationship], yeah, we both do, yeah. I’d like, I mean I wouldn’t, I don’t have an opinion on any other people’s relationship, that’s totally up to them, but ours, definitely, yeah, it’s [sexual activity] always has been like part of our relationship. (Brenda)

Do you think it’s [sexual activity] an important part of a relationship?
A Massive
A Just for intimacy like otherwise you’re just friends living together really like
Q Yes
A You know like, I’m not saying you should be doing it [sexual intercourse] every night of the week. But like, even just sitting on the couch watching a movie like, having a cuddle. Or you know, like something like that. Just I think intimacy is the really important. Just to feel close with someone, you know (Katie)

I kind of missed the closeness because I find if we don’t [have sexual intercourse], then we don’t be as close. It’s kind of like a bonding thing. I think that does, even if I’ve my period for the week I feel like, we get, like he’s in better form I'm in a better form, we are kind of closer then afterwards. (Niamh)</td></tr>
</table>

	If there's weeks that, you know, we don't see each other or we don't have sex, like yeah, you can sort of, like we can feel the difference I think, yeah, yeah. The emotional connection, I suppose or whatever isn't there as much as, yeah, yeah. But that's just, that's us like. (Brenda)
	5.3 Resuming sexual activity post birth **5.3.1 Planning to resume sexual activity**
Extracts kept from:	May, Kate (x2), Sarah, Sally, Vicky (x2), Caroline, Orla, Fiona, Colette, Anna
Extracts removed	*Okay right we are going to do this* [sexual intercourse] *now and it was more to just, same thing as well after we had Kevin it's just to connect with each other really.* (Fabienne) *Q Was it the right time for you (to resume sexual activity)?* *A Probably not, I think probably, you just feel it's, not expected because that makes Michael sound like, he wouldn't ever say, if I said to him, like, that I wasn't ready or anything he'd be like totally fine with it. Well, he would say he was totally fine with it, but I don't know. But probably not for me, not the wrong time as in I really didn't want it but I just probably wasn't really in the mood, looking back.* (Aoibhe) *I was more nervous about it, like I was nervous about something happening down there more than anything, nothing actually happened, like it was fine, it was sort of, it was, I suppose a bit, it wouldn't have been the same as before because we were taking it easy, just in case.* (Brenda) *Now we actually didn't* [have sexual intercourse] *for ages. Partly because she was in the bedroom with us and she's only just, she hasn't been a great sleeper, now she's finally improved.* (Caroline)
	5.3.2 Timing of resuming sexual activity
Extracts kept from:	Fabienne, Nyree, Sally, Leila, Jenny, Aoibhe
Extracts removed	*I think after a couple of weeks, I'd say four or five weeks. Because first we said six weeks but we didn't make it till then. But yeah, I think in the beginning I think the first couple of times might be a bit different because you are just not focused on it at all. But that went back to normal soon enough.* (Anna) *I think we, because they said, like I think in the hospital it was like okay, six weeks, you know, you have to sort of leave it* [sexual intercourse] *six weeks like, and then – so I think I was sort of worked towards that like, so yeah, like, I think it was pretty, pretty soon after that like.* (Brenda) *I know it was hard for him especially right after we had Jake we waited the six weeks or whatever it is they recommended and he kept trying* (to engage in sexual intercourse*) and I remember snapping one day saying don't touch me. And it's not like me.* (Rose)
	5.4. Ongoing challenges to intimacy and sexual activity **5.4.1 Physical challenges to intimacy and sexual activity** **5.4.1.1 Dyspareunia**
Extracts kept from:	Sarah, Fabienne, Niamh (x2), Fiona, Jenny, Caroline, Colette, Nyree

Extracts removed	*Because that* [skin tag] *made things very tight, much tighter than they had been. And that was very uncomfortable, like you know on entry as such. And then it would just be irritated then after.* (Fabienne) *But I suppose because I had a lot of stitches things were a bit tight at the start. So a little bit uncomfortable more so than pain now, I'd say.* (Caroline) *It feels bigger down there. Looser, yeah, just a lack of, lack of tightness.* (Vicky) *I think it could be, it's not as tight [the vagina] or it's loose, or it doesn't feel the same, or something.* *Q And does it feel the same to you, vaginal sex?* *A Kind of, doesn't really feel as tight, like I can't feel it as much you know. But I can still get the same result but it just wouldn't feel as, as compact or something.* (Niamh)
Extracts kept from:	**5.4.1.2 Breast changes** Sally, Orla, Jenny
Extracts removed	*And when you are breastfeeding you feel attached to the child, don't touch these* [my breasts] *they are for, they are to produce milk for the baby, and that's it.* (Fabienne)
Extracts kept from:	**5.4.1.3 Extreme tiredness** May, Vicky, Jenny, Nyree (x2), Orla, Jane, Colette, Anna, Brenda, Leila, Sarah
Extracts removed	*But I wasn't in a big rush to have sex again after Ann was born. Just I guess you just, yeah you're so tired, you're so busy.* (Sally) *I don't know if it's tiredness or thinking of, I don't know what it is, because I suppose sometimes if you're so tired and you're, you're going with the flow and all the rest but you're thinking 'oh, I can't wait to just go asleep now in about five minutes', so I suppose are you really connected, no, you're not really, you're thinking about – sleep.* (Nyree) *I suppose the other thing that's hard is we are both so busy now. Like it's hard to you know, even when we get them both to bed, it's such a team effort and then you have dinner. Dishes washing, it might be half nine and you still have some other job to do. So it is hard to have time to just even talk.* (Caroline) *Especially God, those first few months were like disastrously hard. Because there was no time for intimacy, there was no time for each other, there was no time for anything.* (Jane)
Extracts kept from:	**5.4.2 Psychological challenges to intimacy and sexual activity** **5.4.2.1 Emotional unavailability** Caroline, Aoibhe, Fabienne, Leila, Kate, Rose, Jane
Extracts kept from:	**5.4.2.2 Changed perception of body image** Fabienne, Sally, Jane, Kate, Rose
Extracts removed	*Yeah, I've a belly I suppose, I'm conscious of that and – I wouldn't be prancing around now thinking I'm Giselle now around the bedroom. I kind of, I quick jump in to bed, quick like, you know this kind of way. No, we'd have a lamp on and that, it's not like I'm hiding myself, but I wouldn't be prancing, let's just say.* (Nyree)

	5.4.2.3 Feeling of guilt
Extracts kept from:	Brenda, Joanna, May, Rose, Niamh, Fiona (x2), Vicky,
Extracts removed	*No no, I don't ever feel I'm under pressure or anything, to be honest I put myself under, because I feel very differently to how I used to feel and I don't like that. I wish it was just how it was before. But it's a desire thing, it's like just the want isn't there as much. I don't like that because I don't, like because it feels like you know, I think he sees that as a sign of us like kind of drifting apart you know, which is a bit more dramatic.* (Fabienne) *Yeah well like…I mean I love having sex with him. And when we do it I feel great. But it's just getting there. And I just, I really wish it hadn't changed. (Rose)*
	5.5 Endeavours to overcome challenges to intimacy and sexual activity **5.5.1 Strategies to overcome some of the physical challenges to intimacy and sexual activity** **5.5.1.1 Strategies to overcome dyspareunia**
Extracts kept from:	Joanna, Brenda, Jenny, Agnizeska, Caroline, Joanna, Niamh, Sally, Fabienne, Fiona
Extracts removed	*Yeah I think it's just a little bit, it's just different to how it was before. You know you can't be as vigorous* [during sexual intercourse] *I suppose and because of the scar, like from the episiotomy, I think certain positions are more painful or uncomfortable is probably a better word than painful.* (Fabienne) *Yeah, like, 'oh it's* [the pain] *better that way or not that way'.* (Jenny) *Yeah, yeah, it was painful, but I said, I was like, I was thinking, though I kept going because I knew that every time I tried it, it was better than last time. (Jenny)* *Yeah, that's right, that happened* (vaginal dryness)*. I needed the gel. I needed loads of that.* (Jenny)
	5.5.1.2 Strategies to overcome breast changes
Extracts kept from:	Orla, Fabienne
Extracts removed	*But even if we were being intimate or anything, I'd be like this* [the chest area] *was an area you don't go near, because I was afraid that milk was going to squirt out… I don't know if we discussed it or it was just we both knew.* (Orla)
	5.5.1.3 Strategies to overcome tiredness and being busy
Extracts kept from:	Fiona, Agnizeska, Kate (x2), Colette
Extracts removed	*Sometimes, yea, not like a lot in advance sometimes I'd be like oh well she'll* [the baby] *be here or there and we'd do that* [sexual intercourse*] then... I wouldn't have thought we would be… yea Sam would be like she's going for a nap at four or something, that's it. So yeah we would plan.* (Jenny)
	5.5.2 Endeavours to overcome psychological challenges to intimacy and sexual activity **5.5.2.1 Strategies to remain emotionally available to their partner**
Extracts kept from:	Orla, Leila, Aoibhe (x2), May, Joanna, Nyree, Rose

Extracts removed	*We got a take-away, started watching a series the other night, like, so we kind of have been doing like Friday is the date night you know, so it's good.* (Niamh) *We discussed that* [not having sexual intercourse], *we, you know, when finally we were on our own here in Dublin we discussed that and we resumed our sexual life.* (Agnieszka) *We do sometimes* [talk about sexual activity], *but probably not enough… I find the only times that it* [sexual intercourse] *really would come up is if I get upset about it* [sexual intercourse]. (Rose)
Extracts kept from:	**5.5.2.2 Strategies to manage perception of body image and its impact of intimacy and sexual activity** Rose (x2), Fabienne, Sally (x2), Jenny, Nyree
Extracts removed	*I definitely would be a lot more like lights off sort of than I would have been before. Not like pitch black but I definitely wouldn't be as confident, as in you'll see me naked and want me automatically sort of thing, I would have been before.* (Aoibhe)
Extracts kept from:	**5.5.2.3 Strategies to manage guilt associated with changed interest in sex and sexual desire** Aoibhe, Sarah, Jane, Kate, Vicky, May
Extracts removed	*I think if you're into it* [sexual intercourse], *if you're into yeah, do want to have sex now, or are you just kind of, like, oh God, yeah, go on, get on with it… I think yeah, if you're into it…I'm not going to be thinking about other things. But if I'm not really that bothered, probably I would be thinking about other things, but the majority of the time I'd be into it, because I just wouldn't be bothered otherwise… Obviously there's one or two occasions where you' like yeah, whatever like.* (Colette) *Yeah, I'm kind of the one, that, like, even, oh we haven't done that* [sexual intercourse] *in a while now we probably should.* (Orla) *I think sometimes you can be having sex and stuff because you should, because you are away or something, not necessarily because you want to.* (Aoibhe)
Extracts kept from:	**5.6 Conspiracy of silence** **5.6.1 A lack of information sharing** Jenny, Fabienne, Rose, Anna, Jane, Vicky
Extracts removed	*I think for me the thing was oh well you've had an episiotomy you had an epidural, there is an expectation that some damage will occur but it will resolve itself. So it would have been nice I think a little later, to just be like, for someone to say that's not normal.* (Fabienne)
Extracts kept from:	**5.6.2 Baby focused care** Sarah, Sally
Extracts removed	*Also the GP checks, yeah, they were useless like, they don't really, they don't really care about the mother after the baby is, which is, like the baby is the biggest thing, I get that but happy mother, happy baby.* (Joanna)

	5.7 Seeking help and sources of support
	5.7.1 Formal help seeking behaviour
Extracts kept from:	Jenny (x2), Sarah, Fabienne (x2), Caroline
Extracts removed	No extract removed
	5.7.2 Informal support structures
Extracts kept from:	Jenny (x2), Vicky (x2), Brenda, Joanna, Leila, Fiona, Jane
Extracts removed	*I even said it to one of my friends she was talking about it* [dyspareunia] *recently, she goes yeah actually it's much better than it was before* [before giving birth]. *I said yeah, it's because you have a baby you are stretched out.* (Jenny)

Appendix 28: Dissemination to date

Peer reviewed publications

O'Malley D., Higgins A. & Smith V. (2015) Postpartum Sexual Health: A Principle-Based Concept Analysis. *Journal of Advanced Nursing* **71**(10), 2247-2257

O'Malley D., Higgins A., Begley C., Daly D. & Smith V. (2018) Prevalence of and risk factors associated with sexual health issues in primiparous women at 6 and 12 months postpartum; a longitudinal prospective cohort study (the MAMMI study). *BMC Pregnancy and Childbirth* **18**(1), 196.

Conference proceedings

O'Malley D, Begley C, Higgins A, Smith V. (2013) Self-reported maternal sexual health-related experiences in early pregnancy: Preliminary results from the MAMMI antenatal survey. Proceedings of *the 4th International Nursing and Midwifery Conference, School of Nursing and Midwifery, National University of Ireland Galway, Galway*, April 2013, 2013 pp1.

O'Malley D, Begley C, Higgins A, Smith V. (2013) Sexual health: The prevalence of dyspareunia before and during pregnancy. Proceedings of the *38th Annual Meeting of the International Urogynaecological Association Conference, Dublin*, June 2013, 2013 pp61.
http://www.iuga2013.com/program

O'Malley D. (2013) The prevalence of sexual health problems in primiparous women 3 months postpartum. Proceedings of the *15th Healthcare Interdisciplinary Research Conference & Student Colloquium*, Trinity College Dublin, November 2013

O'Malley D, Higgins A, Smith V, Begley C (2014) An Advanced Concept Analysis – Postpartum Sexual Health. Proceedings of the *Optimising Childbirth Across Europe An Interdisciplinary Maternity Care Conference*, April 2014. PP101
http://www.iresearch4birth.eu/iResearch4Birth/resources/cms/documents/Conference_abstract_book.pdf

O'Malley D, Higgins A, Smith V, Begley D & Daly D (2014) Changes in the sexual health of primiparous women from pre-pregnancy to early pregnancy. Proceedings of the *International Confederation of Midwives Triennial Congress*, Prague, June 2014.
http://midwives2014.org/how-to-read-the-programme.htm

O'Malley D., Smith V. & Higgins A. (2016) Help-seeking behaviour of women experiencing sexual health issues at 6 and 12 months after birth. What helped and did not help? The MAMMI study – Sexual health strand. Proceedings of the *Minding Mothers with Morbidities Conference*, Trinity College Dublin, November 2016.

O'Malley D., Higgins A., Begley, C., Daly D. & Smith V. (2016) The Prevalence of sexual health issues in first time mothers and associated risk factors. The MAMMI study – Sexual health strand. Proceedings of the *17th Healthcare Interdisciplinary Research Conference*, Trinity College Dublin, November 2016

O'Malley D., Smith V., Begley, C., Daly D. & Higgin A. (2017) Sexual health issues and health service seeking behaviour before, during and after birth. The MAMMI study – Sexual health strand. Proceedings of the *International Confederation of Midwives Triennial Congress*, Toronto, June 2017.

O'Malley D., Smith V., Begley, C., Daly D. & Higgin A. (2017) Postpartum sexual health: a principle based concept analysis. Proceedings of the *International Confederation of Midwives Triennial Congress*, Toronto, June 2017.