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# The Impact Of Intimate Partner Violence On Breastfeeding: A Demographic And Health Surveys Analysis Of India, Nepal And Timor-Leste

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THE IMPACT OF INTIMATE PARTNER VIOLENCE ON BREASTFEEDING  
A Demographic and Health Surveys Analysis of India, Nepal and Timor-Leste

By

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Bachelor of Science 2011

Fairfield University, College of Arts and Sciences

A Thesis Presented to

The Faculty of the Department of Epidemiology and Public Health

Yale University

In Candidacy for the Degree of

Master of Public Health

Committee Members

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## Abstract

**Objective:** The objective of this study is to evaluate the association between lifetime experience of intimate partner violence (IPV) and breastfeeding in India, Nepal and Timor-Leste.

**Methods:** Women respondents, between the ages of 15 and 49 years, whose last child was under or equal to 2 years of age and a singleton birth and who were applied the domestic violence module, were included in the final study sample for each country. Logistic regression analyses were used to investigate any unadjusted associations between any lifetime IPV, any physical IPV, any sexual IPV or both and the following breastfeeding outcomes: early breastfeeding initiation (within 1 hour after birth), any breastfeeding and administration of prelacteal feeds. Multivariate logistic regression models with backwards elimination procedures were constructed for each infant feeding outcome with significant covariates selected based on bivariate analyses as well as a conceptual framework.

**Results:** About one-third of women reported experiencing some form of lifetime IPV (38.4% in India, 30.5% in Nepal and 35.0% in Timor-Leste). The prevalence of any breastfeeding, as reported by current status, was almost universal at 85.6% for India, 93.5% for Nepal and 70.0% for Timor-Leste. Experience of both physical and sexual IPV was found to decrease the likelihood of initiating breastfeeding within 1 hour after birth among women in India ( $OR_{adj}$ : 0.72, 95% CI: 0.56-0.94). With respect to prelacteal feeds, women in India ( $OR_{adj}$ : 1.15, 95% CI: 1.05-1.25) who experienced any lifetime IPV were more likely to give prelacteal feeds within the first three days after birth. Mothers who experienced any lifetime physical IPV in India ( $OR_{adj}$ : 1.16, 95% CI: 1.06-1.28) were also more likely to give prelacteal feeds. For any breastfeeding, women in Nepal who experienced any lifetime IPV were 68% less likely to practice breastfeeding at the time of the survey compared to women who did not experience any lifetime IPV ( $OR_{adj}$ : 0.32, 95% CI: 0.14-0.76). In addition, mothers in Nepal who reported only physical IPV were 79% less likely to practice any breastfeeding ( $OR_{adj}$ : 0.21, 95% CI: 0.08-0.57).

**Conclusions:** Experience of both physical and sexual IPV during a respondent's lifetime is associated with decreased likelihood of initiating breastfeeding within 1 hour after birth; furthermore, reports of any lifetime IPV or of physical IPV decrease the odds that a mother will practice any breastfeeding. Experience of any lifetime IPV or of physical IPV only is also linked with increased odds of giving prelacteal feeds. These data can be used to help clarify the association between IPV and breastfeeding and to provide additional information for clinicians to help target screening and intervention programs to women who are pregnant or who have children and are at increased risk for experiencing IPV.

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## INTRODUCTION

Breastmilk offers numerous nutritional and immunological benefits for developing infants, including enhanced microflora and reduced risk of infection<sup>1</sup>. The WHO currently recommends exclusive breastfeeding (EBF) for the first six months of life, followed by continued breastfeeding with introduction of complementary foods for at least 2 years<sup>2</sup>. Adherence to an optimal feeding regimen is also associated with long-term benefits for both infant and mother. For example, researchers have shown that individuals who were breastfed have an overall lower risk of developing diabetes and heart disease<sup>2</sup>. For mothers, breastfeeding has shown to be associated with a reduced risk of ovarian and breast cancer<sup>2</sup>. Breastfeeding also increases spacing between births by suppressing the production of hormones that induce ovulation<sup>2</sup>. In addition, data supports an association between IQ and breastfeeding; infants in the PROBIT cohort study who were randomized to a breastfeeding promotion intervention modeled on the Baby Friendly Hospital Initiative (BFHI) had a verbal IQ score that was 7.5 points higher, on average, at 6.5 years of age than infants who were randomized to the control group or standard infant feeding practices<sup>3</sup>. In terms of full-scale IQ, infants in the experimental group had a 5.9-point advantage over their counterparts in the control arm at 6.5 years of age<sup>3</sup>. In general, initiating breastfeeding immediately after birth and continuing to breastfeed has many distinct advantages; yet while any continued breastfeeding up to 2 years is relatively high at approximately 86% in resource-limited countries<sup>4</sup>, breastfeeding duration varies by indicators such as duration of antenatal care participation and residence area<sup>5</sup>.

A study conducted at a tertiary care hospital in India showed that initiation of breastfeeding within the first hour after birth was 36.4%, and varied according to maternal education and mode of delivery<sup>6</sup>. Promotion of early breastfeeding initiation is especially important considering that data shows it has the capacity to prevent 22% of neonatal deaths<sup>6</sup>. In Nepal, timely breastfeeding initiation was practiced by 35% of mothers and was affected by factors such as the number of antenatal care visits<sup>7</sup>. The type of prelacteal feeding also varies according to region and cultural practices; for example, an analysis of mothers in a rural community in India showed that sugar water was commonly given to infants in the first three days of birth<sup>8</sup>. Prelacteal feeding, or giving substitutes before the introduction of breastmilk, has shown to negatively impact the likelihood that a mother will successfully breastfeed and may delay the onset of breastfeeding<sup>9</sup>. Therefore, it is important to both understand barriers to optimal feeding practices and develop public health campaigns that emphasize the importance of breastfeeding to maternal and child health.

Hospital based programs such as the BFHI and community based initiatives including peer counseling and public health nurse home visiting programs have contributed to improvements in breastfeeding rates. However, several social and biologic barriers still exist. Such barriers include but are not limited to low socioeconomic status, poor education, lactation difficulty, emotional abuse and intimate partner violence (IPV)<sup>10, 11</sup>. IPV, classified here as physical and sexual, can cause both psychological and bodily trauma that make breastfeeding difficult for mothers. Worldwide, between 15-71% of women have experienced IPV<sup>12</sup>, although evidence of the impact of IPV on breastfeeding outcomes is mixed.

Several studies have shown that experience of IPV decreases the likelihood of initiating and continuing any breastfeeding. In crude models, Silverman et al. reported that women reporting domestic violence in the year prior to pregnancy were 45% less likely to breastfeed

their infants born prior to their current pregnancy<sup>13</sup>. Furthermore, mothers who experienced IPV during pregnancy and who initiated breastfeeding were 41% more likely to stop breastfeeding by 4 weeks<sup>13</sup>. However, this association did not hold after adjusting for demographic factors and smoking status. The study population was based on a sample of U.S. women who were participants in the 2000-2003 Pregnancy Risk Assessment Monitoring System (PRAMS), consisting of over 100,000 total respondents. Several limitations were discussed in the PRAMS study, including restriction of IPV to any physical violence rather than also including sexual and emotional violence<sup>13</sup>. This study report includes sexual as well as physical violence but is subject to errors inherent to the research question, such as underreporting exposure to IPV and under or over estimating prior breastfeeding practices. Researchers also included the possibility of over adjustment based on variables such as marital and smoking status, which may have led to an underestimate of the association between IPV and breastfeeding (controlling for variables that are within the causal pathway may either reduce the magnitude size of or negate an observed association)<sup>13</sup>.

A negative association between IPV and breastfeeding, which remained significant, was also found in a recent study investigating the impact of IPV on several maternal outcomes such as postnatal depressive symptoms in addition to breastfeeding. Respondents were sampled from an administrative region of Hong Kong. Researchers found that women who had experienced physical domestic violence were approximately 26% more likely to give formula feed to their infants than to initiate breastfeeding<sup>14</sup>. Strengths of this study include sufficient sample size (over 1,000 respondents), while limitations include lack of qualitative data on the effects of IPV on breastfeeding and restricted generalizability<sup>14</sup>. Generalizability is important when investigating the relationship between IPV and breastfeeding since there are numerous cultural and personal differences that can impact whether or not a woman experiences domestic violence and how she responds to episodes of IPV.

A systematic review by Bair-Merritt et al. (2006) of over 90 studies concluded that overall, there was insufficient evidence to conclude that experience of IPV impacts initiation or duration of breastfeeding<sup>15</sup>. However, the majority of included studies focused on examining the link between witness to parental IPV and subsequent breastfeeding practices by witness to IPV, with only one study looking specifically at current IPV reporting. The study, by Bullock et al. (2001), collected information on reports of abuse from 212 WIC program participants and found no significant difference in breastfeeding outcomes by IPV experience<sup>16</sup>. There were several limitations in this study, including recall bias of infant feeding practices and under reporting exposure to IPV, although the same drawbacks exist in the study presented in this thesis.

While there is few data available to support that IPV has a protective effect on breastfeeding initiation and duration, research has shown that childhood experience of domestic violence increases the likelihood that a mother will begin breastfeeding soon after birth. In a study by Prentice et al. (2002), women who reported being sexually abused during childhood were 2.58 times as likely to initiate breastfeeding than were women who did not report this abuse<sup>17</sup>. Possible reasons for this finding include personal attitudes towards parenting and the desire to compensate for their experience through providing for their child. In the context of IPV, it is not known whether mothers who experience violence by a husband or partner are more likely to translate their experience into providing care for their child or children. For example, it is difficult to tease out a causal association between IPV and breastfeeding practices since post-partum experiences of IPV or IPV during pregnancy occur around the same time period for initiating and continuing breastfeeding.

Other available evidence suggests that IPV decreases the likelihood that a mother will seek care for a child who is ill or undernourished<sup>18</sup>; this is particularly relevant in regions where infant and child malnutrition remains a significant problem, such as South Asia and Sub-Saharan Africa<sup>18</sup>. Therefore, the original hypothesis for this study posits that women who experienced any type of IPV, including physical or sexual IPV, would be less likely to initiate and continue any breastfeeding compared with mothers who experienced no lifetime IPV. This study was conducted in response to the need for concrete evidence regarding the link between reports of IPV and several infant feeding measures. An in-country analysis based on cross-sectional data from three countries in South East Asia, India, Nepal and Timor-Leste, was performed. This study is part of a larger investigation on the association between IPV and breastfeeding in multiple WHO regions, including the region of the Americas, the European region and the African region. Furthermore, a pooled analysis will be conducted in future research to approximate the impact of IPV on breastfeeding both by region and globally.

The aims of this study are to advance our current understanding of the relationship between IPV and breastfeeding by using data from nationally representative samples in three countries in South and Southeast Asia to: 1) assess the prevalence of both IPV and any breastfeeding, early initiation of breastfeeding and use of prelacteal feeds in three countries of South East Asia (India, Nepal and Timor-Leste) and 2) determine whether there is an association between experience of any lifetime IPV, any lifetime physical IPV or any lifetime sexual IPV and infant feeding practices (initiation of breastfeeding within 1-hour post-partum, use of prelacteal feeds within the first three days after birth and any breastfeeding status among children under 2 years of age). Early infant feeding plays a significant role in child morbidity; therefore, any evidence on the association between domestic violence and a mother's likelihood to breastfeed her child may help drive future public health programs. In addition, knowledge of the association between IPV and breastfeeding may help to better inform clinicians and counselors on how to best address both IPV and breastfeeding support.

## **METHODS**

### *Sampling Methodology*

The Demographic and Health Surveys<sup>19</sup> program was initiated in 1984 under the auspices of the United States Agency for International Development<sup>20, 21</sup>. DHS replaced the World Fertility Surveys and in addition to continuing to collect extensive data on reproductive health history, sexual behaviors and family planning indicators, it added numerous maternal and child health and nutrition variables including breastfeeding behaviors. Standard questionnaires were developed so that collected data can be compared across countries. In total, there are three main questionnaires used for each country: the Household Questionnaire, the Women's Questionnaire and the Male Questionnaire. For the purposes of this report, the following data were used from the women's questionnaire: background socio-economic and demographic characteristics, reproductive behavior and intentions, contraception, antenatal, delivery and postpartum care, breastfeeding and child nutritional status (anthropometric measures such as weight-for-age and height-for-age), status of women, AIDS and other sexually transmitted infections and husband's socio-economic and demographic background. The country-specific DHS sampling procedures and IPV modules are described below.



### India; NFHS-3

The 2005-2006 India National Family Health Survey wave 3 (NFHS-3) was led by the Ministry of Health and Family Welfare (MOHFW), the International Institute for Population Studies<sup>22</sup> in Mumbai and the Government of India<sup>23</sup>. Data were collected in two phases, with phase I running from December 2005 to April 2006 and phase II running from April 2006 to August 2006. Researchers used a two-stage sampling design for rural areas and a three-stage design for urban areas<sup>22</sup>. In each state (29 states in total), the rural sample was selected based on the following two stages, (1) selection of the primary sampling unit (PSU) or villages and (2) the systematic selection of households within each PSU. A three-stage sample design was used to account for the high population size in each urban ward, which is equivalent to a municipality. First, researchers selected wards with probability proportional to population size (PPS) sampling. Second, one census enumeration block (CEB) was selected by PPS from each ward. Lastly, households were randomly selected within each CEB. In total, 109,041 households were interviewed, from which responses were collected from 124,386 women (15-49 years of age) and 74,369 men (15-54 years of age)<sup>22</sup>.

### India; Domestic Violence Module

A total of 83,703 women were interviewed for the domestic violence module, 13,999 never-married women and 69,704 ever-married women. Never-married women were interviewed on their experience of IPV by a boyfriend or other family member. For the purpose of this study, ever-married women who responded to the domestic violence survey were included because IPV was defined here as perpetration of physical or sexual abuse by a current or former husband<sup>22</sup>. A total of 49,682 women out of the complete NFHS-3 sample were excluded from answering this module because they belonged to a household with more than one eligible woman or privacy for the interview was not possible<sup>22</sup>.

### Nepal; 2011 NDHS

The 2011 Nepal Demographic and Health Survey (NDHS) was led by the New ERA (an NGO in Nepal that is committed to improving development and reducing the burden of poverty), the Ministry of Health and Population, ICF International and funded by USAID. In total, there are seventy-five districts in Nepal, with each district sub-divided into smaller units<sup>24</sup>. Each district and each administrative unit was divided into wards in rural areas and sub-wards in urban areas; for the purpose of the NDHS, an enumeration area (EA) was created and defined as a ward in a rural area and sub-ward in an urban area<sup>24</sup>. In total, researchers sampled from 95 urban EAs and 194 rural EAs<sup>24</sup>. A total of 35 households were randomly selected from each urban EA and 40 households from each rural EA<sup>24</sup>. Women and men in the households were eligible for interview if they were either usual members of the home or if they stayed in the household the night before the survey. From the 11,085 households selected, 13,485 women were interviewed.

### Nepal; Domestic Violence Module

Households where the men's survey was applied were eligible for inclusion in the domestic violence module, with only one woman per household selected for interview. In total,

4,210 women were eligible for inclusion in the domestic violence module. A sub-set could not be interviewed for privacy reasons, yielding a final sample size of 4,197. For the purpose of this study, only ever-married women who responded to the domestic violence survey were included.

#### Timor-Leste; 2009-2010 TLDHS

The 2009-2010 Timor-Leste Demographic and Health Survey (TLDHS) was led by the National Statistics Directorate of the Ministry of Finance with assistance from ICF Macro and funding through USAID<sup>25</sup>. Researchers employed a stratified two-stage sampling design in which each of a total of 13 districts were separated into urban and rural areas. A total of 26 sampling strata were ultimately created. Samples were selected in every stratum via the following process: first, 455 EAs were selected using PPS sampling and second, households were randomly selected in each cluster (116 urban clusters and 339 rural clusters)<sup>25</sup>. In total, 11,463 households were selected for inclusion in the TLDHS. All eligible women (13,137), or women who stayed in the household the night before the survey, were included<sup>25</sup>. Men were selected from every third household for a final sample size of 4,076 between the age of 15 and 49<sup>25</sup>. Data collection took place from August 2009 to February 2010<sup>25</sup>.

#### Timor-Leste; Domestic Violence Module

One woman from each household was eligible for inclusion in the domestic violence module, for a total of 3,022 possible respondents. Of these, 65 women were excluded because of lack of privacy or refusal to participate in the survey. For the purpose of this study, only ever-married women who responded to the domestic violence survey were included.

#### *Study Population*

The final study sample was selected based on a set of four criteria, applied to each dataset. First, the total population (124,386 women respondents between the ages of 15-49 years) was restricted to women who had at least one child. Second, their last-born child had to be between the ages of 1 to 24 months in order to limit recall bias when responding to questions relating to infant feeding practices and antenatal care. In addition, breastfeeding is typically recommended with complementary feeding for at least 2 years<sup>26</sup>. Third, all last-born children had to be a result of a singleton birth and fourth, mothers had to be selected and interviewed for the domestic violence module.

#### India

Overall, there were 124,386 women respondents between the ages of 15 and 49 years. The sub-set of mother-infant pairs meeting the above criteria totaled 14,775. The weighted sample was 14,312.

#### Nepal

In total, there were 12,674 women respondents between the ages of 15 and 49 years. The final study sample, using the four selection criteria, yielded a sample population of 714 respondents. The weighted sample was 658.

### Timor-Leste

In total, there were 13,137 respondents between the ages of 15 and 49 years. The final study sample, restricted by the four selection criteria, gave a sample population of 1005. The weighted sample was 878.

#### *Dependent Variables*

Three dependent variables were used in this analysis: breastfeeding initiation less than 1 hour after birth, prelacteal feeds and any breastfeeding among children less than 2 years of age. Any breastfeeding defined as a response of yes/no to the question ‘are you currently breastfeeding a child?’ According to the DHS Guide, this response is based on entries in the maternity history for children born in the last 3-5 years. While the variable includes all children born in the last 3-5 years, in this report it pertains only to mothers who have singleton-birth children less than 24 months of age due to analytical sample eligibility criteria.

Prelacteal feeds are any food that is given to the newborn infant within the first three days postpartum, before the introduction of breastmilk<sup>27</sup>. For the purposes of this study, prelacteal feeding was divided into the following categories: milk-based prelacteal feeds (dichotomous yes/no response to the question ‘was your child given milk in the first three days other than breastmilk?’ and ‘was your child given infant formula in the first three days?’), water-based prelacteal feeds (yes/no response to ‘was your child given sugar or glucose water/gripe water/sugar and salt water solution/fruit juice/tea or infusions in the first three days?’), prelacteal water (yes/no response to ‘was your child given plain water in the first three days?’) and other (yes/no response to ‘was your child given honey, coffee, country-specific food item, other in the first three days?’). A response of ‘yes’ to the question, ‘In the first three days, was your child given nothing before milk began to flow?’ indicated no prelacteal feeding.

Early breastfeeding initiation, or providing breast milk to infants within one hour of birth as recommended by WHO<sup>28</sup>, was defined according to mothers’ responses to the question ‘at what time after birth did you first breastfeed your child?’. Women who responded ‘immediately after birth’ or ‘within/by 1 hour’ were classified as initiating breastfeeding early.

#### *Independent Variables*

IPV was assessed using the following approaches:

1. A four-level categorical variable was created: 1) no lifetime physical or sexual IPV, 2) any lifetime physical IPV, 3) any lifetime sexual IPV and 4) both sexual and physical lifetime IPV. Physical IPV was defined as a response of ‘yes’ to the following dichotomous survey questions: ‘did your spouse ever...pushed, shook or threw something, slapped, punched with fist or something harmful, kicked or dragged, tried to strangle or burn, threatened with knife/gun or other weapon, attacked with knife/gun or other weapon, twisted arm or pulled hair?’ Sexual IPV was defined as a response of ‘yes’ to the following survey questions: ‘did your spouse ever...physically forced sex when not wanted, forced other sexual acts when not wanted?’ No lifetime physical or sexual IPV was defined as a response of ‘no’ to all questions, any lifetime physical IPV was categorized as any response of ‘yes’ to any questions of physical IPV perpetration by husband/partner, any sexual lifetime IPV was defined as a response of ‘yes’ to any questions of sexual IPV experience by husband/partner and both sexual and physical lifetime IPV was defined as a response of ‘yes’ to both any sexual IPV and any physical IPV questions.

2. A second binary, dichotomous (yes/no) variable was created from the above four categorical variables: any lifetime IPV or no experience of lifetime IPV. Any lifetime IPV was defined as a response of ‘yes’ to any physical or sexual IPV questions, no lifetime IPV was defined as a response of ‘no’ to all questions regarding physical and sexual IPV.

### *Covariates*

Based on what has been documented in the literature regarding IPV and breastfeeding, several covariates were chosen<sup>10-14, 16, 18, 29</sup>. Sociodemographic variables include place of residence (urban or rural), maternal education (none, primary, secondary or higher), maternal age (<20 years, 20-35 years, 36-49 years), maternal employment status (employed, unemployed), whether the respondent works away or at home, smoking status (yes, no), partner’s education level (none, primary, secondary or higher) and marital status (currently married, formerly married, never married). Marital status was classified as currently married (women who were married or living with a partner) or formerly married (women who were divorced, not living together, or separated) for the purposes of this report, since only ever-married women responded to questions of IPV initiated by their husbands or partners.

Variables related to antenatal care are as follows: place of delivery (at home, private hospital or medical center, public hospital or medical center, other), type of delivery assistance (no assistance, health professional, traditional birth attendant, other), maternal parity (primiparous or multiparous), whether the pregnancy was wanted (wanted, or not wanted at all), mode of delivery (c-section or vaginal), size of child as reported by the mother (small, average, large), number of antenatal care visits (none, one to three visits, four or more visits) and age of infant in months (0 to 2, 3 to 5, 6 to 12, 13 to 24). A final covariate was included that accounts for whether or not the mother witnessed IPV as a child by her parents. This variable is defined as ‘Did father ever beat mother?’ and is classified as yes or no.

### *Statistical Analyses*<sup>12</sup>

The data sets for India, Nepal and Timor-Leste were accessed and downloaded from <http://www.measuredhs.com/> with permission from the Measure DHS research team. All analyses were conducted using SAS (version 9.3). Variables were recoded as described above and the Chi-Square test was used to investigate any association between exposure to IPV and breastfeeding. Bivariate analyses were also performed using the Chi-Square test to evaluate any link between listed covariates and exposure to lifetime, physical or sexual IPV. A p-value of <0.05 was indicative of statistical significance.

Crude logistic regression was conducted to evaluate the association between type of IPV/experience of lifetime IPV and each of the four dependent variables as well as the any association between the dependent variables and included covariates. Values in the crude logistic model showed statistical significance if the 95% confidence interval did not include the

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<sup>1</sup> All procedures were carried out using the ‘proc survey’ command to account for use of data derived from a complex survey design (i.e. cluster sampling rather than simple random sampling of each population)<sup>30</sup>.

Gorrell XCaP. An Introduction to the SAS Survey Analysis PROCs. NESUG; Social and Scientific Systems, Inc. 2008..

<sup>2</sup> Sampling weights were included in all analyses to compensate for differences imparted by the selection process and to therefore ensure that the final study population was as close as possible to a nationally representative sample.

value 1.00. Any covariates that were found to be significantly associated with either the independent or dependent variables in the bivariate analyses were included in the full-adjusted logistic regression model, as well as those variables that were conceptually relevant to the association between IPV and breastfeeding<sup>31</sup>. In the adjusted regression models, no lifetime experience of IPV was used as the referent group.

Backwards elimination was used to find the most parsimonious model to evaluate the association between breastfeeding and lifetime exposure to IPV, physical IPV and IPV during pregnancy.

For bivariate analyses, crude logistic regression and adjusted logistic regression, sample weights were applied to approximate national estimates. Furthermore, the SAS cluster and stratum options were used to obtain more precise estimates of standard error. All results with an associated p-value <0.05 were considered statistically significant.

## ETHICAL CONSIDERATIONS

The DHS domestic violence module was implemented according to guidelines from the WHO<sup>32</sup>. All staff members conducting interviews received training on how to administer the survey and how to deal with emergency situations<sup>19</sup>. In addition, interviewers were instructed on the purpose of the module and why certain measures were used to assess experience of IPV<sup>19</sup>.

Privacy was ensured in all interviews through use of techniques such as stopping the interview or changing the subject of conversation if another adult entered the room, or rescheduling the interview to a more appropriate time. Referrals were also provided for women experiencing domestic violence, including both counseling and legal services. All interviewers were trained to provide help and referral information in a way that did not place the respondent in any additional danger. Details on other ethical considerations are available through Measure DHS<sup>19</sup>.

This study was based on secondary data analyses of existing data from DHS that is publicly available and was therefore exempt from the Institutional Review Board process at Yale University.

## RESULTS

### *Descriptive Statistics*

The majority of women in each country were between 20 to 35 years of age (84.0% in India, 80.5% in Nepal and 69.5% in Timor-Leste). Most were currently married (98.9% in India, 99.5% in Nepal and 96.7% in Timor-Leste) and about half of all respondents were employed at the time of interview in Nepal (54.5%) and Timor-Leste (53.4%). In India, 25% of women were employed. In India, Nepal and Timor-Leste, most respondents resided in rural areas (74.9%, 80.0% and 77.9%). Almost half, 47.3%, of mothers in India lacked primary education. In Nepal, 42.6% and in Timor-Leste, 31.4% of women did not have primary education. In Timor-Leste, 38.2% of mothers had up to a secondary education. Among respondents in India, 9.0% reported tobacco smoking, followed by 12.4% in Nepal and 3.7% in Timor-Leste.

### *Prevalence of IPV and associations with other variables*

Prevalence of lifetime IPV since the age of 15 was 38.4% in India, 30.5% in Nepal and 35.0% in Timor-Leste. In India, women who experienced any lifetime IPV were more likely to reside in rural areas, lack primary education and to score in the poorest category on the wealth index, be unemployed and multiparous. In Nepal, the same associations applied. In Timor-Leste, education, parity and wealth index were not significantly associated with IPV in bivariate analysis. However, women who experienced any IPV were more likely to work away from home and to reside in rural areas (Table 2).

Any lifetime physical IPV was reported among 35.9% of women respondents in India, 25.0% of respondents in Nepal and 34.2% in Timor-Leste. Physical IPV was associated with lack of primary education among mothers, the lowest score of poorest on the wealth index, rural place of residence, unemployed status, having more than one child and maternal tobacco smoking. In Nepal, the association of any physical IPV was significant with unemployed status, lack of primary education and having more than one child. For respondents in Timor-Leste, experience of physical IPV was associated with lack of maternal education, the lowest category on the five-scale wealth index and employment away from home (Table 2).

Of all respondents, 11.6%, 15.9% and 2.4% in India, Nepal and Timor-Leste, reported any lifetime experience of sexual IPV. Among women in India, sexual IPV was associated with lack of primary education, poorest ranking on the wealth index, rural place of residence, being unemployed and having more than one child. In Nepal, sexual IPV was linked with poorest ranking on the wealth index and having more than one child. For respondents in Timor-Leste, any sexual violence was associated with rural place of residence, employment away from the home and having more than one child (Table 2.0).

### *Pregnancy, obstetric care and breastfeeding*

For almost all respondents in each country, their last pregnancy was wanted (88.7% in India, 87.4% in Nepal and 97.8% in Timor-Leste). The majority of women respondents in India received some antenatal care, with 40.5% reporting at least 1-3 visits and 36.6% reporting four or more visits. Among mothers in Nepal, 35.0% received 1-3 visits and 50.4% went for four or more antenatal care visits. In Timor-Leste, 34.6% of mothers went for one to three antenatal care visits and 52.5% went for four or more visits.

Most mothers in each country were categorized as currently breastfeeding (85.6% in India, 93.5% in Nepal and 70.0% in Timor-Leste). Use of prelacteal feeds varied considerably however. For example, 57.4% of mothers in India administered prelacteal feeds, followed by 22.4% of women in Nepal and 12.7% of respondents in Timor-Leste. Early breastfeeding initiation also varied, with 23.7% of mothers in India reporting breastfeeding within 1-hour post-partum, 50.0% of women in Nepal and 20.5% of mothers in Timor-Leste.

### *IPV and Early Breastfeeding Initiation*

#### India

In crude logistic regression analyses, higher maternal education was associated with more than a two-fold increase in the odds of initiating breastfeeding within 1 hour after birth (OR 2.76 for higher than secondary education compared to no education, 95% CI: 2.21-3.43). Having

more than one child on the other hand, was associated with a 14% decrease in the likelihood of early initiation of breastfeeding (OR 0.86, 95% CI: 0.77-0.98). Place of delivery (at a public or private hospital) was also associated with an increased likelihood of initiating breastfeeding, which is probable effect of education by healthcare staff on early breastfeeding initiation and appropriate infant feeding practices; although this would have to be confirmed in future studies. Type of delivery assistance (by a traditional birth attendant) was linked with a decreased odds of beginning breastfeeding within 1 hour, which may relate to cultural attitudes or societal practices surrounding early infant feeding and possible discouragement of early breastfeeding. In terms of lifetime IPV, having any lifetime experience (physical or sexual) was associated with a 28% decreased probability of initiating early breastfeeding. This association became insignificant in the adjusted model (Table 4.0). Experience of only sexual IPV was associated with a 21% reduction in the likelihood of initiating early breastfeeding (OR 0.79, 95% CI: 0.69-0.91); while experiencing both physical and sexual IPV was associated with a 49% decrease in the odds of early breastfeeding (OR 0.51, 95% CI: 0.42-0.64).

### Nepal

According to crude logistic regression analyses, women who administered milk-based prelacteal feeds to their infant were 65% less likely to initiate early breastfeeding compared with women who did not provide prelacteal feeds. Furthermore, mothers who gave birth by caesarian section were 73% less likely to initiate breastfeeding 1-hour post-partum and if the mother did not want her last pregnancy, she was 48% less likely to start early breastfeeding. Attending more than 4 antenatal care visits was associated with a 2.79 increased odds of initiating breastfeeding compared to women who did not participate in antenatal care. Mothers who delivered at a public health facility were 3.07 times more likely to breastfeed early. Mothers who had a health professional deliver their infants were 10.16 times more likely to initiate breastfeeding early and those who had assistance from relatives and others were 4.5 times more likely to initiate breastfeeding early compared to women who did not receive any delivery assistance.

With respect to lifetime IPV, mothers who experienced only physical IPV were 50% less likely to initiate breastfeeding early (OR 0.50, 95% CI: 0.25-0.97). Mothers who reported any lifetime IPV (physical or sexual) were 42% (OR 0.58, 95% CI: 0.37-0.92) less likely to initiate breastfeeding early compared with mothers who did not experience any lifetime IPV. In the adjusted model, these associations became insignificant (Table 4.0).

### Timor-Leste

Use of any type of prelacteal feeding (prelacteal water, water-based prelacteal feeds, milk-based prelacteal feeds) was associated with a decreased likelihood of initiating breastfeeding early (Table 3.0). Further, employment was associated with a 36% decreased likelihood of early breastfeeding initiation (OR 0.64, 95% CI: 0.43-0.97). Lastly, delivery assistance by relatives and others was linked with a 60% decreased probability of initiating breastfeeding (OR 0.40, 95% CI: 0.23-0.70).

For lifetime IPV and type of IPV, there were no significant associations with early breastfeeding initiation in the crude or adjusted regression models (Table 3.0).

## *IPV and Prolactal Feeding*

### India

In the crude logistic regression model, mothers between the ages of 36-49 years were 37% more likely to practice prolactal feeding compared with mothers who were less than 20 years of age. Maternal education was negatively associated with prolactal feeding with respondents who completed higher than secondary education 69% less likely to administer prolactal feeds compared to women who did not have an educational background. Partner's education level followed the same trend (Table 3.0). Decreased likelihood of prolactal feeding was also associated with increasing wealth index; women in the richest category were 49% less likely to give prolactal feeds compared with women in the poorest wealth category. Rural residence was linked with a 40% increase in the odds of prolactal feeding and mothers who delivered at a private or public health facility were less likely to initiate prolactal feeding (57% less likely for private health facility and 76% less likely for delivery at public health facilities). Women who delivered by caesarian section were 22% less likely to practice prolactal feeding compared with mothers who delivered vaginally. Mothers who had a traditional birth attendant or an attendant who was a relative were twice to three times as likely to begin prolactal feeding (Table 3.0) and women whose last pregnancy was unwanted were 64% more likely to give prolactal feeds compared to women whose last pregnancy was wanted.

Any lifetime IPV was associated with an 81% increased probability of prolactal feeding (OR 1.81, 95% CI: 1.61-2.03). Physical IPV only was linked with a more than two-fold increase in prolactal feeding (OR 2.26, 95% CI: 1.60-3.19) and women who experienced any sexual IPV only were 1.73 (95% CI: 1.52-1.97) times as likely to give prolactal feeds compared with women who experienced no lifetime IPV. Mothers who experienced both physical and sexual IPV were 1.93 times as likely to give prolactal feeds (95% CI: 1.60-2.32). After adjusting for potential confounders (Table 4.0), the odds of prolactal feeding given any lifetime IPV decreased to 1.15 (95% CI: 1.05-1.25) while remaining statistically significant. Any lifetime physical IPV also remained significantly associated with prolactal feeding (OR 1.16, 95% CI: 1.06-1.28).

### Nepal

In the crude regression model, mothers who delivered by caesarian section were 62% less likely to administer prolactal feeds (OR 0.38, 95% CI: 0.17-0.85) compared with mothers who delivered vaginally. Infants who were small for gestational age, according to the mothers' reports, were 61% less likely to give prolactal feeds (OR 0.39, 95% CI: 0.16-0.96) and women who did not desire their last pregnancy were 5.42 times as likely to give prolactal feeds (95% CI: 2.31-12.72) as were mothers who wanted their last pregnancy.

Regarding experience with IPV, women who reported physical IPV only were 4.84 times as likely to give prolactal feeds (95% CI: 1.21-19.40) compared with mothers who did not experience any lifetime IPV. Mothers who reported both physical and sexual IPV were 6.77 times as likely to administer prolactal feeds (95% CI: 1.70-26.91) as were mothers who reported no lifetime IPV. These associations became non-significant in the adjusted model.



### Timor-Leste

In the crude logistic regression model, mothers who had a secondary education were 1.93 times as likely to give prelacteal feeds (95% CI: 1.17-3.19) as were mothers who had no education. Mothers whose husband/partner had higher than a secondary education were almost three times as likely to initiate prelacteal feeding (OR 2.91, 95% CI: 1.08-7.82). Furthermore, women in the richest category of the wealth index were 2.87 times as likely to administer prelacteal feeds before breastfeeding (OR 2.87, 95% CI: 0.32-0.98) compared with women who were in the poorest category on the wealth index. Mothers living in rural areas were 42% less likely to initiate prelacteal feeding (OR 0.56, 95% CI: 0.32-0.98) compared with mothers who lived in urban areas. There were no significant associations with respect to lifetime IPV or type of lifetime IPV.

In the adjusted model, there were no significant associations between prelacteal feeding and type of IPV or any lifetime IPV.

### *IPV and Any Breastfeeding*

### India

Mothers of infants between the ages of 6 to 24 months were less likely to practice any breastfeeding compared to mothers of infants from 0 to 5 months (OR 0.46, 95% CI: 0.29-0.74 and OR 0.17, 95% CI: 0.11-0.26 for 6-12 months and 13-24 months, respectively). Women respondents between the ages of 20-35 years were also 37% less likely to practice any breastfeeding (OR 0.63, 95% CI: 0.48-0.83) compared to women less than 20 years of age. In addition, women who had a secondary or higher education had reduced odds of breastfeeding (OR 0.72, 95% CI: 0.62-0.84 and OR 0.38, 95% CI: 0.30-0.48 for secondary and higher, respectively). The same association applied to mothers whose husbands/partners had a secondary education or higher (Table 4.0). Women in the richest category of wealth index were 63% less likely to practice any breastfeeding (OR 0.37, 95% CI: 0.30-0.46) as were women in the poorest wealth index group. Rural area of residence was linked with an 89% increased odds of breastfeeding (OR 1.89, 95% CI: 1.65-2.17) and multiparous women were 50% more likely to breastfeed (OR 1.50, 95% CI: 1.30-1.73). Childhood witness to IPV was associated with a 21% increased odds of breastfeeding (OR 1.21, 95% CI: 1.02-1.43). Any and type of lifetime IPV were not significantly associated with any breastfeeding in the crude logistic model.

In the adjusted model, there were no significant associations between IPV and any breastfeeding.

### Nepal

In the unadjusted model, women in the poorer category on the wealth index were 75% less likely to practice any breastfeeding (OR 0.25, 95% CI: 0.08-0.80) and those in the richest group were 79% less likely to breastfeed (OR 0.21, 95% CI: 0.06-0.73). Any type of prelacteal feeding was also associated with a significant reduction in the odds of breastfeeding; for example, mothers who gave prelacteal water were 90% less likely to practice any breastfeeding

(OR 0.10, 95% CI: 0.01-0.98). There were no significant associations between IPV and any breastfeeding in the crude logistic model.

After adjusting for potential confounding variables (Table 4.0), any lifetime experience of IPV was associated with a 68% reduction in the odds of practicing any breastfeeding (OR 0.32, 95% CI: 0.14-0.76). Lastly, experience of any physical IPV was linked with a 79% decreased likelihood of breastfeeding (OR 0.21, 95% CI: 0.08-0.57).

### Timor-Leste

Mothers of infants between the ages of 13 to 24 months were 94% less likely to practice any breastfeeding compared to mothers of infants 0 to 2 months of age (OR 0.06, 95% CI: 0.02-0.18). Women who had more than one child were 1.72 times as likely to practice breastfeeding compared with primiparous women (95% CI: 1.07-2.77). There were no significant associations in the unadjusted model between IPV experience and any breastfeeding.

## DISCUSSION

The main purpose of this study was to investigate the impact of IPV on breastfeeding outcomes through conducting analyses of DHS survey data from three countries in the WHO region of South East Asia. This study is especially meant to add to the existing database of literature on the relationship between IPV and infant feeding, which is often inconsistent and requires clarification.

In this report, IPV was categorized as any lifetime IPV, any lifetime sexual IPV, any lifetime physical IPV or both. Reported breastfeeding outcomes were early breastfeeding initiation, prelacteal feeding and any breastfeeding. In adjusted models for India, both physical and sexual IPV were associated with decreased likelihood of early breastfeeding initiation. Among respondents in India, women who reported both types of IPV were 28% less likely to begin breastfeeding within 1-hour post-partum. Adjusted models also showed that any lifetime IPV as well as only physical IPV are associated with an increased probability of prelacteal feeding. In the analyses of India, respondents who reported any lifetime IPV were 15% more likely to give prelacteal feeds. The odds of any breastfeeding was also affected by lifetime and physical IPV; women in Nepal who experienced lifetime IPV had 0.32 times the odds of practicing any breastfeeding compared to women who reported no lifetime IPV. Respondents who experienced any physical IPV were 79% less likely to practice breastfeeding. This data is consistent with evidence showing that IPV is negatively associated with maternal and child health outcomes<sup>6, 11, 13, 18</sup> and adds to the current knowledge base on the effect of domestic violence on multiple infant feeding outcomes.

Relative to Nepal and Timor-Leste, the sample size of eligible women respondents in India was extensive, possibly allowing for better detection of an association between IPV and each of the three infant feeding practices. Although, an association was also detected between any breastfeeding and lifetime as well as physical IPV in Nepal, which has a sample size below that of Timor-Leste; one plausible explanation is that IPV is more closely associated with infant feeding in Nepal and India and that other factors influence breastfeeding to a great extent in Timor-Leste such as maternal education or infant age<sup>33</sup>. Both covariates were significantly associated with lifetime IPV in bivariate analyses. However, the degree to which these factors mediate the association between IPV and breastfeeding is relatively unclear. Attitudes towards

domestic violence may also have influenced the association in all countries; while this study did not take this into account, it may be useful in the future to evaluate whether attitudes towards IPV affect the likelihood of breastfeeding. Childhood witness to IPV was included in the final adjusted model and may have accounted in part for attitudes towards domestic violence with prior research suggesting that adverse childhood experiences are associated with an increased likelihood of experiencing IPV<sup>34</sup>.

Overall, findings support the hypothesis that IPV may have a negative impact on breastfeeding outcomes, with significant associations found with regard to prelacteal feeding, early breastfeeding initiation and any breastfeeding. In general, IPV increases the likelihood of prelacteal feeding and decreases the odds of initiating breastfeeding within 1 hour after birth and of any breastfeeding. While further research, especially use of longitudinal data, is necessary to determine causality, it is probable that IPV affects maternal and child health through breastfeeding. In a review by Averbuch et al., IPV around the time of pregnancy was associated with increased risk of maternal depression and low birth weight<sup>35</sup>; pregnancy and the postpartum period are also time periods when mothers may be particularly vulnerable to domestic violence<sup>36</sup>. Depression and post-traumatic stress resulting from experiences of abuse can also lead to complications during birth<sup>36</sup>, which may affect the likelihood of initiating early breastfeeding or of practicing any breastfeeding. Both physical and sexual IPV are particularly concerning in the context of maternal and child health since they not only result in trauma but can also lead to psychological distress during pregnancy and through the post-partum period. Both have the potential to impact a mother's likelihood of providing for the health of her child<sup>36</sup>.

Results presented in this report support the conclusion that IPV decreases a woman's likelihood of practicing optimal breastfeeding practices recommended by the WHO<sup>37</sup>. Significant findings were related to different IPV indicators including any lifetime IPV, physical IPV and both physical and sexual IPV. Overall, these associations indicate that experience of domestic violence decreases the probability that a mother will initiate breastfeeding within 1 hour postpartum as well as practice any breastfeeding, as defined by current status for women with children equal to or under 2 years of age. In addition, reporting any episodes of IPV increases the likelihood of prelacteal feeding. These findings are of concern because previous studies have found that prelacteal feeds are inversely associated with breastfeeding duration<sup>9</sup>.

Results from this report have important implications for developing effective interventions for women who are victims of IPV. From a clinician standpoint, research has shown that women who have experienced episodes of IPV value inclusion of an IPV assessment within a basic medical history<sup>38</sup>. Certain conditions must be met however, including not requiring disclosure or identification as IPV victims, giving several options for counseling and preserving respect for autonomy<sup>38</sup>. Ensuring that health care providers are cognizant not only of the widespread prevalence of IPV but also of its impact on maternal and child health, is a critical component in building support for integration of IPV assessment and counseling. In addition, given results from this report and from prior evidence, it may be useful for clinicians to integrate IPV screening and counseling in antenatal care settings or on maternity wards. In a study investigating the impact of motherhood on IPV, researchers cited that women who have children with their partner are more likely to return to an abusive relationship for the sake of their children's wellbeing<sup>39</sup>; furthermore, having multiple children may serve as a marker for experiencing IPV<sup>39</sup>. It is important that counselors and clinicians target potential risk groups for IPV, namely women of reproductive age since violence not only impacts maternal health but also

the wellbeing of their children. In conclusion, clinician counseling and support for victims of IPV should also take additional breastfeeding support into strong consideration.

## STRENGTHS AND LIMITATIONS

The goal of this study was to add to existing evidence on the association between IPV and breastfeeding and to fill in existing gaps that may clarify the relationship between reports of domestic violence and maternal/child health. Analyses were conducted with nationally representative data from three countries within the region of South East Asia. While results cannot be applied to the region as a whole, it is possible to state that IPV does play a role in a mother's ability to breastfeed her child among women in certain South Asian populations. Furthermore, this report evaluated the impact of four distinct categories of IPV (physical only, sexual only, both physical and sexual and any lifetime IPV) on multiple breastfeeding outcomes: early breastfeeding initiation, any breastfeeding and administration of prelacteal feeds. Future analysis will extend these outcomes further to investigate the impact of IPV on exclusive breastfeeding for the first 6 months after birth.

There are also limitations of this study that are both inherent to the research question and to the study design. First, as with most stigmatized health behaviors, the prevalence of IPV is likely underestimated in survey data; according to a prior review, women and girls who have survived episodes of domestic violence are often too afraid or ashamed to disclose their experiences<sup>35</sup>. On the other hand, women are likely to over report any breastfeeding and early initiation of breastfeeding as a result of recall bias or social desirability bias. However, research has shown that maternal recall generally provides accurate estimates when the time period from the date of interview to their child's birth is less than or equal to 3 years<sup>40</sup>. Restricting the study sample to mothers of children who are 2 years of age or less was therefore one method to reduce the potential for recall bias when collecting information about prelacteal feeding and early breastfeeding initiation. Additionally, recall bias is not a significant issue when evaluating any breastfeeding in cross-sectional studies since breastfeeding is evaluated on current status. Under reporting of experiences of IPV is likely to result in an underestimate of the association between domestic violence and each breastfeeding outcome.

This study also did not take into account emotional abuse, which may affect the severity of either physical or sexual IPV; although emotional abuse may also precede sexual or physical IPV. In addition, while data were available, the frequency of IPV in relation to each breastfeeding outcome was not measured. Rather, this report evaluated the impact of any response to IPV and likelihood of breastfeeding and use of prelacteal feeds. Future studies should examine longitudinal data in order to determine whether IPV is likely to be causally linked with decreasing a mother's probability of practicing any breastfeeding and of initiating early breastfeeding. Data from the Demographic and Health surveys however is cross-sectional; therefore, data supports an association between experiences of domestic violence and reduced odds of breastfeeding but may not predict such outcomes.

## CONCLUSION

Findings from this study indicate that exposure to any lifetime IPV, including any physical and sexual IPV, has a negative impact on early breastfeeding initiation, and any breastfeeding overall. Evidence from India, Nepal and Timor-Leste indicates that IPV is a significant issue in countries within the region of South-East Asia and that it may explain, in

part, both poor infant feeding practices and short and long-term child health. Breastfeeding is an essential component of infant care and provides numerous nutritional and immunological benefits. Furthermore, especially in the developing world, breastfeeding can prevent morbidity and mortality associated with infectious disease transmitted from unclean water that is used to prepare prelacteal feeds. Breastfeeding also creates a sense of bonding between the mother and infant and is also known to provide several maternal health benefits such as increased spacing between births and reduced risk of many types of cancer including ovarian, breast and endometrial. It is important therefore to consider that evidence from this study supports that IPV is likely to prevent a mother from practicing optimal feeding and may decrease the net protective benefit from breastfeeding. Future research will consider IPV in the context of exclusive breastfeeding and will also extend analyses to the African region, region of the Americas and the European region. Lastly, pooled analyses will be conducted for all regions and from a global perspective to assess whether IPV has an overall effect on prevalence of breastfeeding worldwide.

<i>Table 1: Prevalence of IPV and Breastfeeding by Country</i>		
Variable sample)	Prevalence (%)	N (weighted
<b>India</b>		
None	61.6	14289
Lifetime experience of IPV since age 15	38.4	14289
<u>Type of lifetime experience of IPV since age 15</u>		
Physical only	35.9	14289
Sexual only	11.6	14293
Both physical and sexual	9.1	14293
Currently breastfeeding	85.6	14312
Use of prelacteal feeds	57.4	13914
Early breastfeeding initiation	23.7	13939
<b>Nepal</b>		
None	69.5	658
Lifetime experience of IPV since age 15	30.5	658
<u>Type of lifetime experience of IPV since age 15</u>		
Physical only	25.0	658
Sexual only	15.9	658
Both physical and sexual	10.4	658
Currently breastfeeding	93.5	658
Use of prelacteal feeds	22.4	640
Early breastfeeding initiation	50.0	640
<b>Timor-Leste</b>		
None	65.0	878
Lifetime experience of IPV since age 15	35.0	878
<u>Type of lifetime experience of IPV since age 15</u>		
Physical only	34.2	878
Sexual only	2.4	878
Both physical and sexual	1.6	878
Currently breastfeeding	70.0	878
Use of prelacteal feeds	12.7	860
Early breastfeeding initiation	20.5	860

Table 2: Sociodemographic Characteristics and Chi-Square Analyses by Type of IPV

	n	%	Lifetime IPV		Physical IPV		Sexual IPV	
			%	p	%	p	%	p
INDIA								
Total (n-weighted) 100	N=14312	100	N=5492		N=5135		N=1652	
<b>Maternal Age</b>								
<20 years	1673	11.7	4.4	<0.001	3.7	<0.001	1.8	<0.001
20-35 years	12028	84.0	31.8		30.0		9.0	
36-49 years	611	4.3	2.3		2.2		0.7	
<b>Maternal education</b>								
No education	6767	47.3	23.2	<0.001	22.1	<0.001	7.1	<0.001
Primary	1960	13.7	5.5		5.1		1.7	
Secondary	4742	33.1	9.1		8.2		2.6	
Higher	843	5.9	0.6		0.5		0.1	
<b>Partner's education</b>								
No education	3929	27.7	13.9	<0.001	13.4	<0.001	4.1	<0.001
Primary	2053	14.5	6.7		6.3		2.0	
Secondary	6617	46.7	15.7		14.3		4.9	
Higher	1570	11.1	2.1		1.9		0.5	
<b>Marital Status</b>								
Currently married	14156	98.9	37.8	<0.001	35.3	<0.001	11.3	<0.001
Formerly married	152	1.1	0.6		0.6		0.3	
<b>Wealth Index</b>								
Poorest	3618	25.3	13.0	<0.001	12.4	<0.001	4.1	<0.001
Poorer	3144	22.0	10.1		9.5		3.0	
Middle	2833	19.8	7.6		7.0		2.3	
Richer	2600	18.2	5.4		4.9		1.5	
Richest	2118	14.8	2.3		2.0		0.7	
<b>Type of residence</b>								
Urban	3592	25.1	7.4	<0.001	7.0	<0.001	1.9	<0.001
Rural	10721	74.9	31.1		29.0		9.7	
<b>Employment Status</b>								
Unemployed	10722	75.0	27.3	<0.001	25.2	<0.001	8.3	0.03
Employed	3572	25.0	11.2		10.8		3.2	
<b>*Place of employment</b>								
At home	1006	21.3	9.5	0.65	8.9	0.43	3.2	0.62
Away from home	3714	78.7	36.1		34.5		11.0	
<b>Parity</b>								
Primiparous	4498	31.4	8.8	<0.001	7.7	<0.001	2.8	<0.001
Multiparous	9815	68.6	29.6		28.2		8.8	
<b>Infant Gender</b>								
Male	7412	51.8	19.8	0.78	18.7	0.68	5.6	0.09
Female	6900	48.2	18.6		17.2		5.9	
<b>Infant's age (months)</b>								
0-2	1257	8.8	3.0	0.07	2.7	<0.001	1.1	0.62
3-5	2057	14.4	5.4		5.0		1.7	
6-12	4234	29.6	11.2		10.3		3.3	
13-24	6765	47.3	18.8		17.8		5.3	
<b>Received antenatal care</b>								
None	3253	22.9	12.4	<0.001	11.9	<0.001	3.7	<0.001
1-3	5745	40.5	16.9		15.7		5.4	
4+	5189	36.6	9.3		8.5		2.4	
<b>Place of delivery</b>								
Home	8477	59.2	27.3	<0.001	25.8	<0.001	8.6	--
Private health facility	2645	18.5	6.0		5.4		1.8	
Public health facility	3168	22.1	5.1		4.7		1.2	
Other	19	0.1	0.1		0.1		0.0	
<b>Mode of delivery</b>								
Vaginal	13022	91.1	36.8	<0.001	34.5	<0.001	11.1	<0.001

Caesarian	1276	8.9	1.7		1.4		0.5	
<b>Size of child</b>								
Large	3287	23.2	8.7	<0.001	8.1	<0.001	2.6	<0.001
Average	7714	54.5	19.9		18.7		5.6	
Small	3147	22.2	9.7		9.0		3.3	
<b>Maternal Tobacco Smoking</b>								
Yes	1285	9.0	4.6	<0.001	4.3	<0.001	1.6	<0.001
No	13028	91.0	33.9		31.7		9.9	
<b>Type of delivery assistance</b>								
None	72	0.5	0.18	<0.001	0.2	<0.001	0.03	<0.001
Health professional	5585	39.1	10.8		9.9		3.0	
Traditional birth attendant	2629	18.4	8.3		7.8		2.6	
Other (including relatives)	6006	42.0	19.1		18.0		6.0	
<b>Mother's desire to get pregnant</b>								
Yes	12698	88.7	32.4	<0.001	30.1	<0.001	9.7	<0.001
No	1611	11.3	6.0		5.8		1.8	
<b>Did father ever beat mother</b>								
Yes	2752	20.6	24.9	<0.001	12.0	<0.001	4.2	<0.001
No	10636	79.4	12.6		23.1		7.0	
<b>Breastfeeding (any)</b>								
Yes	12257	85.6	33.3	0.053	31.1	0.12	10.1	0.21
No	2056	14.4	5.1		4.8		1.5	
<b>Breastfeeding initiation</b>								
<1hr post-partum	3311	23.7	7.7	<0.001	7.2	<0.001	1.9	<0.001
>1hr post-partum	10629	76.2	30.6		28.6		9.6	
NEPAL								
Total (n-weighted)	N=658	100	N=200		N=164		N=104	
<b>Maternal Age</b>								
<20 years	88	13.5	4.5	0.69	3.3	0.84	2.4	0.30
20-35 years	529	80.5	23.8		20.0		12.0	
36-49 years	39	6.0	2.1		1.8		1.5	
<b>Maternal education</b>								
No education	280	42.6	18.3	<0.001	15.9	<0.001	8.8	0.16
Primary	119	18.1	5.2		4.3		2.5	
Secondary	217	33.0	6.3		4.7		3.9	
Higher	41	6.2	0.8		0.1		0.6	
<b>Partner's education</b>								
No education	137	20.9	9.2	<0.001	8.2	<0.001	5.7	0.002
Primary	156	23.7	8.8		7.7		4.5	
Secondary	287	43.7	11.6		9.0		5.0	
Higher	76	11.7	0.9		0.2		0.6	
<b>Marital Status</b>								
Currently married	654	99.5	30.4	0.92	24.9	0.88	15.7	0.50
Formerly married	4	0.5	0.1		0.1		0.1	
<b>Wealth Index</b>								
Poorest	209	31.8	11.2	0.007	8.6	0.02	6.0	0.02
Poorer	111	17.0	6.2		5.3		4.3	
Middle	133	20.3	7.5		6.5		2.8	
Richer	130	19.8	4.8		4.2		2.5	
Richest	72	11.1	0.7		0.4		0.3	
<b>Type of residence</b>								
Urban	131	20.0	4.3	0.04	2.8	0.008	2.6	0.42
Rural	526	80.0	26.3		22.2		13.3	
<b>Employment Status</b>								
Unemployed	299	45.5	15.4	0.27	12.9	0.25	6.4	0.42
Employed	358	54.5	15.1		12.1		9.5	
<b>Parity</b>								
Primiparous	244	37.1	8.3	0.01	5.8	0.003	3.6	0.03
Multiparous	413	62.9	22.2		19.2		12.2	



<b>Infant Gender</b>								
Male	324	49.3	15.0	0.93	12.0	0.76	10.2	0.003
Female	333	50.7	15.5		13.0		5.6	
<b>Infant's age (months)</b>								
0-2	44	6.7	1.49	0.48	0.99	0.43	0.81	0.58
3-5	108	16.5	3.97		3.23		2.02	
6-12	186	28.3	9.22		7.32		4.38	
13-24	319	48.5	15.84		13.49		8.65	
<b>Received antenatal care</b>								
None	96	14.6	6.7	<0.001	6.0	<0.001	3.4	0.13
1-3	230	35.0	12.7		11.4		6.0	
4+	331	50.4	11.0		7.7		6.5	
<b>Place of delivery</b>								
Home	342	53.6	19.1	0.34	16.1	0.33	11.4	0.02
Private health facility	227	35.6	9.5		7.2		3.6	
Public health facility	47	7.3	2.0		1.8		0.8	
Other	21	3.4	0.7		0.6		0.4	
<b>Mode of delivery</b>								
Vaginal	619	94.2	29.0	0.70	23.8	0.75	15.0	0.85
Caesarian	38	5.8	1.5		1.3		0.8	
<b>Size of child</b>								
Large	105	16.0	3.4	0.17	3.0	0.46	2.1	0.68
Average	439	66.8	21.0		17.5		11.2	
Small	113	17.2	6.1		4.6		2.5	
<b>Maternal Tobacco Smoking</b>								
Yes	81	12.4	4.8	0.23	4.3	0.14	1.9	0.96
No	576	87.6	25.7		20.8		13.9	
<b>Type of delivery assistance</b>								
None	26.4	4.0	1.3	0.17	1.2	0.23	0.4	<0.001
Health professional	271	41.3	10.3		8.3		3.6	
Traditional birth attendant	6.7	1.0	0.4		0.4		0.2	
Other (including relatives)	353	53.7	18.6		15.2		11.6	
<b>Mother's desire to get pregnant</b>								
Yes	575	87.4	25.1	0.01	20.1	0.005	12.4	0.003
No	82	12.6	5.4		5.0		3.4	
<b>Did father ever beat mother</b>								
Yes	90	14.3	5.6	0.10	4.6	0.14	4.1	0.002
No	540	85.7	24.8		20.1		11.6	
<b>Breastfeeding (any)</b>								
Yes	615	93.5	28.1	0.43	22.9	0.35	15.0	0.73
No	42	6.5	2.4		2.1		0.89	
<b>Breastfeeding initiation</b>								
<1hr post-partum	320	50.0	12.6	0.01	9.4	0.003	7.1	0.34
>1hr post-partum	320	50.0	18.3		16.0		9.0	
TIMOR-LESTE								
Total (n-weighted)	N=878	100	N=307		N=300		N=21	
<b>Maternal Age</b>								
<20 years	43	4.9	1.9	0.89	1.4	0.75	0.6	0.003
20-35 years	610	69.5	24.2		24.0		1.7	
36-49 years	224	25.6	8.8		8.9		0.1	
<b>Maternal education</b>								
No education	276	31.4	10.1	0.30	10.1	0.19	0.4	N/A
Primary	244	27.8	11.1		11.2		0.8	
Secondary	335	38.2	12.9		12.1		1.2	
Higher	22	2.5	0.7		0.7		0.0	
<b>Partner's education</b>								
No education	234	26.7	7.4	0.05	7.4	0.09	0.2	N/A
Primary	241	27.5	10.9		10.7		0.5	
Secondary	361	41.2	15.3		14.7		1.7	

Higher	39	4.5	1.3		1.3		0.0	
<b>Marital Status</b>								
Currently married	849	96.7	32.9	0.003	32.6	0.22	1.9	0.007
Formerly married	28	3.2	2.2		1.6		0.5	
<b>Wealth Index</b>								
Poorest	189	21.6	7.9	0.15	7.9	0.28	0.4	0.54
Poorer	188	21.5	6.1		6.1		0.5	
Middle	163	18.6	5.8		5.8		0.3	
Richer	177	20.3	8.2		7.9		0.4	
Richest	158	18.1	7.0		6.4		0.9	
<b>Type of residence</b>								
Urban	194	22.1	10.6	<0.001	10.1	0.001	1.2	0.03
Rural	684	77.9	24.4		24.1		1.2	
<b>Employment Status</b>								
Unemployed	560	63.8	23.6	0.13	23.4	0.05	1.6	0.99
Employed	318	36.2	11.4		10.8		0.9	
<b>*Place of employment</b>								
At home	150	46.6	10.5	0.001	10.5	0.005	0.2	0.006
Away from home	172	53.4	21.5		20.0		2.2	
<b>Parity</b>								
Primiparous	147	16.7	5.6	0.72	4.8	0.16	1.1	0.02
Multiparous	731	83.2	29.4		29.4		1.3	
<b>Infant Gender</b>								
Male	465	53.0	19.2	0.46	18.9	0.35	1.00	0.38
Female	413	47.0	15.8		15.2		1.4	
<b>Infant's age (months)</b>								
0-2	59	6.8	2.81	0.22	2.81	0.57	0.26	0.03
3-5	133	15.2	6.37		5.56		0.99	
6-12	274	31.2	9.97		9.97		0.71	
13-24	411	46.8	15.88		15.87		0.49	
<b>Received antenatal care</b>								
None	113	13.0	4.2	0.03	4.2	0.12	0.08	0.03
1-3	301	34.6	14.5		13.6		1.6	
4+	457	52.5	16.4		16.4			
<b>Place of delivery</b>								
Home	659	75.1	25.1	N/A	24.8	N/A	1.4	N/A
Private health facility	216	24.7	9.8		9.2		1.1	
Public health facility	1	0.1	0.1		0.1		0.0	
Other	0.7	0.1	0.0		0.0		0.0	
<b>Mode of delivery</b>								
Vaginal	860	97.9	33.8	0.12	33.6	0.83	1.9	<0.001
Caesarian	18	2.1	1.2		0.6		0.5	
<b>Size of child</b>								
Large	209	24.4	8.9	<0.001	8.3	<0.001	0.9	0.28
Average	502	58.5	17.1		17.1		0.9	
Small	146	17.1	9.0		8.7		0.7	
<b>Maternal Tobacco Smoking</b>								
Yes	32	3.7	1.8	0.11	1.8	0.09	0.1	0.87
No	845	96.3	33.2		32.4		2.4	
<b>Type of delivery assistance</b>								
None	26	3.0	1.4	0.19	1.3	0.18	0.0	N/A
Health professional	266	30.4	10.9		10.4		1.0	
Traditional birth attendant	63	7.2	3.3		3.3		0.1	
Other (including relatives)	519	59.3	19.4		19.1		1.4	
<b>Mother's desire to get pregnant</b>								
Yes	859	97.8	34.1	0.56	33.3	0.51	2.4	N/A
No	19	2.2	0.92		0.9		0.0	
<b>Did father ever beat mother</b>								
Yes	297	40.6	23.8	<0.001	22.8	<0.001	1.9	0.001
No	435	59.4	13.6		13.6		0.4	
<b>Breastfeeding (any)</b>								
	614	70.0	24.1	0.60	23.2	0.41	1.9	0.38

Yes	263	30.0	10.9		10.9		0.5	
No								
<b>Breastfeeding initiation</b>	683	79.5	28.8	0.22	28.0	0.32	1.9	0.75
<1hr post-partum	175	20.5	6.30		6.3		0.6	
>1hr post-partum								

\*Weighted N=2149; sample restricted to women who are currently employed

Table 3: Crude logistic regression analyses of breastfeeding outcomes and sociodemographic and IPV variables of women and infants in India, Nepal and Timor-Leste

	<b>Breastfeeding Initiation</b>		<b>Prelacteal Feeds</b>		<b>Any Breastfeeding</b>	
<b>INDIA</b>						
<b>Infant's age (months)</b>						
0-2	1.00	***	1.00	***	1.00	***
3-5	1.05	0.83-1.34	1.07	0.86-1.33	0.73	0.44-1.23
6-12	1.24	0.99-1.54	1.04	0.86-1.26	0.46	0.29-0.74
13-24	1.20	0.97-1.47	1.13	0.94-1.36	0.17	0.11-0.26
<b>Maternal age</b>						
<20 years	1.00	***	1.00	***	1.00	***
20-35 years	1.34	1.09-1.63	0.87	0.74-1.02	0.63	0.48-0.83
36-49 years	0.69	0.50-0.96	1.37	1.04-1.80	0.82	0.54-1.26
<b>Maternal Education</b>						
No education	1.00	***	1.00	***	1.00	***
Primary	1.67	1.41-1.99	0.60	0.51-0.70	0.84	0.66-1.05
Secondary	2.47	2.15-2.83	0.40	0.35-0.45	0.72	0.62-0.84
Higher	2.76	2.21-3.43	0.31	0.25-0.38	0.38	0.30-0.48
<b>Partner's Education</b>						
No education	1.00	***	1.00	***	1.00	***
Primary	0.27	0.04-1.79	0.66	0.57-0.78	0.97	0.77-1.22
Secondary	0.29	0.05-1.73	0.63	0.55-0.73	0.68	0.58-0.81
Higher			0.50	0.41-0.60	0.57	0.45-0.71
<b>Marital Status</b>						
Formerly married	1.00	***	1.00	***	1.00	***
Currently married	1.06	0.6-1.86	0.70	0.41-1.17	2.07	1.12-3.84
<b>Wealth Index</b>						
Poorest	1.00	***	1.00	***	1.00	***
Poorer	1.09	0.91-1.31	0.95	0.81-1.10	0.82	0.65-1.02
Middle	1.64	1.37-1.97	0.74	0.63-0.87	0.77	0.62-0.96
Richer	1.96	1.63-2.36	0.54	0.45-0.65	0.61	0.49-0.75
Richest	2.01	1.66-2.43	0.51	0.42-0.60	0.37	0.30-0.46
<b>Type of Residence</b>						
Urban	1.00	***	1.00	***	1.00	***
Rural	0.72	0.62-0.82	1.40	1.23-1.59	1.89	1.65-2.17
<b>Employment Status</b>						
Unemployed	1.00	***	1.00	***	1.00	***
Employed	0.98	0.86-1.12	0.97	0.86-1.10	1.01	0.87-1.18
<b>*Place of employment</b>						
At home	1.00	***	1.00	***	1.00	***
Away from home	0.90	0.70-1.17	0.89	0.70-1.13	1.23	0.94-1.67
<b>Parity</b>						
Primiparous	1.00	***	1.00	***	1.00	***
Multiparous	0.86	0.77-0.98	1.22	1.10-1.36	1.50	1.30-1.73

<b>Prelacteal Feeds</b>					
None	1.00	***	N/A		1.00 ***
Prelacteal water	0.14	0.10-0.21			0.91 0.66-1.28
Water-based prelacteal feeds	0.12	0.09-0.15			0.91 0.70-1.17
Milk-based prelacteal feeds	0.05	0.04-0.07			0.98 0.80-1.19
<b>Currently Breastfeeding</b>					
No	1.00	***	1.00	***	N/A
Yes	0.92	0.79-1.08	0.95	0.83-1.10	
<b>Received antenatal care</b>					
None	1.00	***	1.00	***	1.00 ***
1-3	2.33	1.91-2.84	0.43	0.37-0.51	1.03 0.83-1.27
4+	4.54	3.73-5.54	0.20	0.17-0.23	0.61 0.50-0.75
<b>Place of delivery</b>					
Home	1.00	***	1.00	***	1.00 ***
Private health facility	2.04	1.77-2.36	0.43	0.37-0.50	0.49 0.42-0.58
Public health facility	2.91	2.53-3.34	0.24	0.21-0.27	0.72 0.61-0.85
Other	2.56	0.38-17.34	0.23	0.04-1.24	0.80 0.11-5.83
<b>Mode of delivery</b>					
Vaginal	1.00	***	1.00	***	1.00 ***
Caesarian	0.87	0.72-1.04	0.78	0.66-0.93	0.61 0.49-0.74
<b>Size of child</b>					
Large	1.00	***	1.00	***	1.00 ***
Average	1.14	0.99-1.32	1.11	0.97-1.27	1.09 0.92-1.30
Small	1.01	0.85-1.20	1.34	1.14-1.58	0.92 0.75-1.12
<b>Type of delivery assistance</b>					
None	1.00	***	1.00	***	1.00 ***
Health professional	1.27	0.66-2.45	0.86	0.48-1.56	0.27 0.05-1.37
Traditional birth attendant	0.50	0.25-0.99	2.00	1.10-3.60	0.39 0.08-2.03
Other (including relatives)	0.57	0.29-1.10	2.58	1.44-4.62	0.42 0.08-2.14
<b>Mother's desire to get pregnant</b>					
Yes	1.00	***	1.00	***	1.00 ***
No	0.55	0.45-0.66	1.64	1.38-1.94	1.19 0.97-1.46
<b>Did father ever beat mother</b>					
No	1.00	***	1.00	***	1.00 ***
Yes	1.13	0.98-1.31	1.02	0.89-1.17	1.21 1.02-1.43
<b>Type of Lifetime IPV</b>					
None	1.00	***	1.00	***	1.00 ***
Physical Only	0.72	0.47-1.09	2.26	1.60-3.19	1.40 0.87-2.24
Sexual Only	0.79	0.69-0.91	1.73	1.52-1.97	1.14 0.96-1.34
Both physical and sexual	0.51	0.42-0.64	1.93	1.60-2.32	1.17 0.89-1.54
<b>Lifetime IPV</b>					
No	1.00	***	1.00	***	1.00 ***
Yes	0.72	0.63-0.81	1.81	1.61-2.03	1.16 0.99-1.35
NEPAL					

<b>Infant's age (months)</b>					
0-2	1.00	***	1.00	***	1.00
3-5	1.30	0.58-2.93	0.62	0.24-1.58	2.57 0.28-23.49
6-12	1.35	0.64-2.84	0.54	0.23-1.23	0.63 0.08-4.69
13-24	1.00	0.99-1.00	0.50	0.23-1.08	0.55 0.10-3.06
<b>Maternal age</b>					
<20 years	1.00	***	1.00	***	1.00
20-35 years	0.67	0.34-1.34	0.63	0.30-1.32	0.64 0.22-1.84
36-49 years	0.49	0.18-1.31	0.84	0.26-2.65	1.00 0.23-4.33
<b>Maternal Education</b>					
No education	1.00	***	1.00	***	1.00
Primary	1.56	0.87-2.78	0.62	0.30-1.26	1.81 0.60-5.39
Secondary	1.98	1.18-3.33	0.94	0.52-1.67	0.94 0.43-2.05
Higher	3.78	1.17-12.16	1.01	0.29-3.51	1.37 0.33-5.63
<b>Partner's Education</b>					
No education	1.00	***	1.00	***	1.00
Primary	1.21	0.66-2.21	0.59	0.30-1.16	1.15 0.38-3.52
Secondary	1.95	1.21-3.14	0.58	0.30-1.12	0.90 0.35-2.31
Higher	1.74	0.78-3.90	0.62	0.24-1.61	0.46 0.14-1.47
<b>Marital Status</b>					
Currently married	1.00	***	1.00	***	1.00
Formerly married	2.54	0.27-23.87	<0.001	<0.001	0.36 0.03-4.06
<b>Wealth Index</b>					
Poorest	1.00	***	1.00	***	1.00
Poorer	0.99	0.55-1.79	3.25	1.67-6.32	0.51 0.17-1.51
Middle	1.49	0.76-2.91	5.66	2.60-12.29	0.25 0.08-0.80
Richer	1.60	0.76-3.36	1.79	0.77-4.17	0.46 0.16-1.32
Richest	1.04	0.51-2.14	4.95	2.09-11.68	0.21 0.06-0.73
<b>Type of Residence</b>					
Urban	1.00	***	1.00	***	1.00
Rural	0.74	0.43-1.29	0.99	0.52-1.90	2.43 1.06-5.57
<b>Employment Status</b>					
Unemployed	1.00	***	1.00	***	1.00
Employed	1.04	0.63-1.71	0.28	0.16-0.49	2.33 1.07-5.06
<b>Parity</b>					
Primiparous	1.00	***	1.00	***	1.00
Multiparous	0.74	0.48-1.13	0.84	0.47-1.49	1.67 0.89-3.15
<b>Prelacteal Feeds</b>					
None	1.00	***	N/A		1.00
Prelacteal water	0.46	0.08-2.65			0.10 0.01-0.98
Water-based prelacteal feeds	0.56	0.10-3.10			0.10 0.01-0.91
Milk-based prelacteal feeds	0.35	0.19-0.64			0.35 0.15-0.84
<b>Currently Breastfeeding</b>					
No	1.00	***	1.00	***	N/A
Yes	1.10	0.51-2.36	0.38	0.17-0.85	

<b>Received antenatal care</b>						
None	1.00	***	1.00	***	1.00	***
1-3	1.77	0.88-3.54	0.85	0.34-2.09	0.81	0.29-2.28
4+	2.79	1.44-5.39	0.39	0.16-0.96	1.51	0.59-3.89
<b>Place of delivery</b>						
Home	1.00	***	1.00	***	1.00	***
Private health facility	1.50	0.72-3.12	1.90	0.69-5.27	1.44	0.41-5.08
Public health facility	3.07	1.84-5.10	0.72	0.42-1.23	1.06	0.48-2.34
Other	0.69	0.17-2.78	0.37	0.05-2.92	0.31	0.04-2.20
<b>Mode of delivery</b>						
Vaginal	1.00	***	1.00	***	1.00	***
Caesarian	0.27	0.11-0.66	5.42	2.31-12.72	0.70	0.21-2.34
<b>Size of child</b>						
Large	1.00	***	1.00	***	1.00	***
Average	1.12	0.67-1.87	1.21	0.54-2.69	1.51	0.59-3.84
Small	0.85	0.49-1.47	1.13	0.47-2.73	2.76	0.80-9.47
<b>Type of delivery assistance</b>						
None	1.00	***	1.00	***	1.00	***
Health professional	10.16	2.50-41.27	4.84	1.21-19.40	1.41	0.28-6.99
Traditional birth attendant	8.02	0.99-65.17	<0.001		1.05	0.08-14.31
Other (including relatives)	4.50	1.08-18.79	6.77	1.70-26.91	1.18	0.22-6.22
<b>Mother's desire to get pregnant</b>						
Yes	1.00	***	1.00	***	1.00	***
No	0.52	0.29-0.92	0.69	0.31-1.56	1.48	0.53-4.14
<b>Did father ever beat mother</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.99	0.56-1.73	1.85	0.97-3.54	3.44	0.58-20.26
<b>Type of Lifetime IPV</b>						
None	1.00	***	1.00	***	1.00	***
Physical Only	0.50	0.25-0.97	1.55	0.74-3.24	0.53	0.20-1.40
Sexual Only	1.15	0.52-2.55	0.56	0.19-1.61	0.98	0.23-4.26
Both physical and sexual	0.50	0.25-1.02	2.41	1.17-4.99	1.09	0.33-3.60
<b>Lifetime IPV</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.58	0.37-0.92	1.59	0.97-2.60	0.72	0.32-1.64
<b>Hurt by partner during any pregnancy?</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.64	0.26-1.60	3.33	1.36-8.17	0.68	0.16-2.89
TIMOR-LESTE						
<b>Infant's age (months)</b>						
0-2	1.00	***	1.00	***	1.00	***
3-5	0.88	0.39-2.02	0.79	0.27-2.31	1.42	0.36-5.62

6-12	0.57	0.27-1.21	1.18	0.46-2.98	0.56	0.18-1.76
13-24	0.75	0.37-1.55	1.15	0.49-2.68	0.06	0.02-0.18
<b>Maternal age</b>						
<20 years	1.00	***	1.00	***	1.00	***
20-35 years	1.73	0.73-4.08	0.68	0.24-1.93	1.13	0.55-2.30
36-49 years	1.21	0.50-2.94	0.86	0.29-2.60	1.20	0.56-2.59
<b>Maternal Education</b>						
No education	1.00	***	1.00	***	1.00	***
Primary	0.81	0.51-1.30	1.25	0.63-2.46	0.77	0.50-1.18
Secondary	0.86	0.53-1.37	1.93	1.17-3.19	0.82	0.55-1.24
Higher	1.83	0.23-14.69	1.75	0.51-6.04	0.53	0.18-1.58
<b>Partner's Education</b>						
No education	1.00	***	1.00	***	1.00	***
Primary	0.82	0.49-1.36	1.61	0.86-3.03	0.96	0.61-1.50
Secondary	0.90	0.55-1.48	1.76	0.99-3.12	0.99	0.62-1.58
Higher	1.54	0.41-5.83	2.91	1.08-7.82	0.91	0.37-2.21
<b>Marital Status</b>						
Currently married	1.00	***	1.00	***	1.00	***
Formerly married	3.57	0.90-14.16	0.51	0.10-2.51	1.06	0.36-3.13
<b>Wealth Index</b>						
Poorest	1.00	***	1.00	***	1.00	***
Poorer	1.34	0.70-2.58	1.81	0.83-3.98	1.29	0.82-2.05
Middle	1.12	0.68-1.85	1.24	0.59-2.64	1.18	0.72-1.92
Richer	1.69	0.97-2.94	1.88	0.90-3.93	1.21	0.70-2.10
Richest	1.23	0.60-2.52	2.87	1.35-6.08	0.81	0.50-1.32
<b>Type of Residence</b>						
Urban	1.00	***	1.00	***	1.00	***
Rural	0.75	0.46-1.24	0.56	0.32-0.98	1.24	0.85-1.80
<b>Employment Status</b>						
Unemployed	1.00	***	1.00	***	1.00	***
Employed	0.64	0.43-0.97	1.68	0.99-2.87	0.93	0.66-1.30
<b>*Place of employment</b>						
At home	1.00	***	1.00	***	1.00	***
Away from home	0.86	0.46-1.61	1.00	0.45-2.23	0.78	0.47-1.31
<b>Parity</b>						
Primiparous	1.00	***	1.00	***	1.00	***
Multiparous	0.82	0.46-1.44	1.85	0.98-3.49	1.72	1.07-2.77
<b>Prelacteal Feeds</b>						
None	1.00	***	N/A		1.00	***
Prelacteal water	0.17	0.08-0.34			0.86	0.44-1.69
Water-based prelacteal feeds	0.08	0.03-0.20			1.10	0.38-3.18
Milk-based prelacteal feeds	0.28	0.10-0.76			0.67	0.24-1.89
<b>Currently Breastfeeding</b>						
No	1.00	***	1.00	***	N/A	
Yes	0.89	0.57-1.40	0.85	0.49-1.45		
<b>Received antenatal care</b>						



None	1.00	***	1.00	***	1.00	***
1-3	1.32	0.77-2.27	1.91	0.82-4.47	1.06	0.62-1.78
4+	1.24	0.75-2.04	1.86	0.84-4.14	0.84	0.50-1.41
<b>Place of delivery</b>						
Home	1.00	***	1.00	***	1.00	***
Private health facility	>999.99		<0.001		0.99	0.68-1.45
Public health facility	1.08	0.61-1.89	1.49	0.79-2.76	>999.99	
Other	>999.99		<0.001		<0.001	
<b>Mode of delivery</b>						
Vaginal	1.00	***	1.00	***	1.00	***
Caesarian	1.37	0.33-5.77	1.62	0.41-6.45	0.65	0.18-2.27
<b>Size of child</b>						
Large	1.00	***	1.00	***	1.00	***
Average	0.76	0.46-1.25	0.59	0.35-1.03	1.19	0.83-1.71
Small	0.40	0.23-0.70	1.32	0.68-2.58	0.87	0.53-1.43
<b>Type of delivery assistance</b>						
None	1.00	***	1.00	***	1.00	***
Health professional	2.11	0.82-5.40	0.94	0.31-2.85	1.05	0.38-2.89
Traditional birth attendant	2.22	0.76-6.45	0.69	0.19-2.54	0.65	0.20-2.08
Other (including relatives)	1.82	0.78-4.28	0.67	0.23-1.89	0.95	0.35-2.59
<b>Mother's desire to get pregnant</b>						
Yes	1.00	***	1.00	***	1.00	***
No	0.66	0.26-1.69	2.56	0.88-7.39	1.18	0.44-3.12
<b>Did father ever beat mother</b>						
No	1.00	***	1.00	***	1.00	***
Yes	1.09	0.71-1.70	1.08	0.64-1.83	1.41	0.98-2.03
<b>Type of Lifetime IPV</b>						
None	1.00	***	1.00	***	1.00	***
Physical Only	1.32	0.88-1.97	1.25	0.74-2.08	0.88	0.62-1.25
Sexual Only	>999.99		<0.001		>999.99	
Both physical and sexual	0.50	0.14-1.74	1.45	0.33-6.36	0.94	0.31-2.87
<b>Lifetime IPV</b>						
No	1.00	***	1.00	***	1.00	***
Yes	1.28	0.86-1.89	1.22	0.74-2.02	0.91	0.64-1.29
<b>Hurt by partner during any pregnancy?</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.72	0.34-1.52	0.78	0.27-2.30	1.08	0.46-2.52

Table 4: Adjusted logistic regression models of IPV exposure (lifetime, physical, sexual) and early breastfeeding initiation, any breastfeeding and any prelacteal feeding

	Breastfeeding Initiation <sup>1</sup>		Any breastfeeding <sup>2</sup>		Prelacteal Feeding <sup>3</sup>	
	OR	95% CI	OR CI	95%	OR	95% CI
<b>INDIA</b>						
<b>Lifetime Experience of IPV</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.99	0.87-1.15	1.03	0.86-1.24	1.15	1.05-1.25
<b>Type of IPV</b>						
None	1.00	***	1.00	***	1.00	***
Physical Only	1.08	0.93-1.26	1.01	0.82-1.24	1.16	1.06-1.28
Sexual Only	0.99	0.56-1.77	1.26	0.71-2.25	1.12	0.84-1.49
Both Physical and Sexual IPV	0.72	0.56-0.94	1.04	0.76-1.43	1.10	0.96-1.27
<b>NEPAL</b>						
<b>Lifetime Experience of IPV</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.73	0.43-1.26	0.32	0.14-0.76	0.98	0.76-1.26
<b>Type of IPV</b>						
None	1.00	***	1.00	***	1.00	***
Physical Only	0.56	0.25-1.22	0.21	0.08-0.57	0.98	0.70-1.37
Sexual Only	1.26	0.56-2.85	0.60	0.09-3.91	0.86	0.54-1.39
Both Physical and Sexual IPV	0.78	0.34-1.78	0.59	0.11-3.06	1.07	0.69-1.66
<b>Hurt During Pregnancy</b>						
No	1.00	***	1.00	***	1.00	***
Yes	1.10	0.45-2.69	0.26	0.05-1.29	0.74	0.42-1.31
<b>TIMOR-LESTE</b>						
<b>Lifetime Experience of IPV</b>						
No	1.00	***	1.00	***	1.00	***
Yes	1.46	0.81-2.63	0.77	0.47-1.24	1.16	0.90-1.49
<b>Type of IPV</b>						
None	1.00	***	1.00	***	1.00	***
Physical Only	1.49	0.82-2.71	0.78	0.48-1.25	1.17	0.91-1.51
Sexual Only	>999.99		>999.99		0.91	0.20-4.05
Both Physical and Sexual	0.59	0.15-2.37	0.51	0.07-3.58	0.89	0.48-1.68

<b>IPV Hurt During Pregnancy</b>						
No	1.00	***	1.00	***	1.00	***
Yes	0.58	0.23-1.46	1.60	0.34-2.42	0.89	0.59-1.37

<sup>1</sup>Model adjusted for the following variables: maternal education, infant age in days, partner's education, wealth index, parity, frequency of antenatal care, place of delivery, mode of delivery, size of infant, maternal smoking history, assistance during delivery, maternal witness of IPV by parents and prelacteal feeding.

<sup>2</sup>Model adjusted for the following variables: maternal age, infant age in days, marital status, wealth index, type of residence, parity, place of delivery, size of infant, maternal witness of IPV by parents and prelacteal feeding.

<sup>3</sup>Model adjusted for the following variables: infant age in days, partner's education, mother's employment status, antenatal care, mode of delivery, place of delivery, size of infant, assistance during delivery, maternal witness of IPV by parents and prelacteal feeding.

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