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# Understanding Help Seeking for Disordered Eating in Emerging Adulthood

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UNDERSTANDING HELP SEEKING FOR DISORDERED EATING IN EMERGING  
ADULTHOOD

By

Annamaria J. McAndrew

A Thesis  
Submitted to the Faculty of Graduate Studies  
through the Department of Psychology  
in Partial Fulfillment of the Requirements for  
the Degree of Master of Arts  
at the University of Windsor

Windsor, Ontario, Canada

2016

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## AUTHOR'S DECLARATION OF ORIGINALITY

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## ABSTRACT

In a society dominated by a drive for thinness, the presence of eating pathology in young women is not uncommon. This study examined the prevalence and perceptions of disordered eating in a sample of  $N = 198$  female university students. Participants completed measures assessing eating pathology, general attitudes towards help seeking, and perceived barriers to seeking help. To examine whether a discrepancy existed between perceptions of disordered eating in oneself versus another individual, participants read a hypothetical vignette in which the main character (the participant herself *or* another female student) exhibited disordered eating. Results revealed that participants with greater eating pathology were more likely to identify as having a problem with their eating and food-related behaviours. Greater eating pathology also predicted perceiving more barriers to seeking help, which in turn predicted less positive attitudes towards seeking help for psychological issues. Results also supported the existence of a broad discrepancy in terms of how participants perceive disordered eating in themselves versus in another individual. This self-other discrepancy was reflected in a variety of study outcomes, including beliefs about seeking help for disordered eating, beliefs about coping with disordered eating, preferences for seeking help, and barriers to seeking help. The present findings serve to inform our understanding of disordered eating in emerging adulthood, and why young women so often fail to seek help for this issue. In particular, the self-other discrepancy in perceptions of disordered eating highlights the need to consider how young women perceive disordered eating in themselves (as opposed to in another individual) when research will be used to inform the development of disordered eating prevention and intervention programs.

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## CHAPTER 1

### Introduction

During any given year, one in every five Canadians will experience a mental health issue (Smetanin, Stiff, Briante, Adair, Ahmad, & Khan, 2011). Young persons aged 15 to 24 are at particular risk, being more likely to experience mental health issues relative to any other age group in the population (Statistics Canada, 2013). Despite the high prevalence of mental illness in this population, however, less than one-quarter of young Canadians experiencing a mental health problem will ultimately choose to seek help from available mental health services (Bergeron, Poirier, Fournier, Roberge, & Barrette, 2005).

With regards to young women in particular, the prevalence of disordered eating attitudes and behaviours are of particular concern, from both clinical and societal perspectives. When symptoms are severe enough to merit clinical diagnosis, eating disorders are among the most lethal psychological disorders; as such, timely recognition, diagnosis, and treatment is critical for outcome (see Walker & McVey, 2015 for review; Becker, Franko, Nussbaum, & Herzog, 2004). Although lifetime prevalence rates for clinically diagnosable eating disorders range from 0.9% to 3.5% for women (Hudson, Hiripi, Pope, & Kessler, 2007), rates of disordered eating behaviours in samples of female adolescents and adults often exceed these values. For instance, in a sample of 2822 university students in the United States, 13.5% of female students self-reported significant levels of eating disorder pathology (Eisenberg, Nicklett, Roeder, & Kirz, 2011). The observation of disordered eating in samples of young women is not unusual or unexpected in the current day and age, however. Even over a decade ago, longitudinal research that followed girls throughout adolescence found that eating disorder

symptomology appeared to increase across development (Jones, Bennett, Olmsted, Lawsin, & Rodin, 2001). By the age of 18, 27% of girls in the sample reported significant eating disorder symptomology – most commonly, food restriction by dieting (Jones et al., 2001). In more recent years, the issue of disordered eating has not abated; rather, more recent findings indicate that incidence rates of certain disordered eating behaviours may actually be increasing over time (Smink, van Hoeken, & Hoek, 2012).

Regardless of whether an individual's symptom presentation merits clinical diagnosis, disordered eating attitudes and behaviours are of concern, as they are thought to be unhealthy in and of themselves (Levine & McVey, 2015). Furthermore, many of these behaviours represent risk factors for future eating disorder development (Levine & McVey, 2015; Patton, Selzer, Coffey, Carlin, & Wolfe, 1999). Compounding this issue, and as is the case with mental health issues in general (e.g., Bergeron et al., 2005), the number of individuals affected by eating pathology is thought to far exceed the number of individuals professionally treated (Fairburn & Cooper, 1982; Eisenberg et al., 2011). As such, it is absolutely essential to recognize not only the prevalence of disordered eating attitudes and behaviours, but also to understand how such symptomology is perceived by young women – are these behaviours thought to be problematic? Or, as was eloquently stated several decades earlier, perhaps we have evolved into a culture of “normative discontent” in terms of female physical appearance (Rodin, Silberstein, & Striegel-Moore, as cited in Silberstein, Striegel-Moore, Timko, & Rodin, 1988) – if body dissatisfaction has normalized for women, it is possible that associated weight-control attitudes and behaviours have normalized as well. In an effort to contribute to our current conceptualization of disordered eating in young adult women, the present study assessed:

a) the prevalence of disordered eating attitudes and behaviours in a university sample; b) how eating pathology is perceived, both in oneself and in another; and c) attitudes and beliefs about seeking professional help for disordered eating.

### **Eating Disorders**

The “Feeding and Eating Disorders” section in *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) outlines six different diagnoses: Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), Rumination Disorder, Avoidant/Restrictive Food Intake Disorder (ARFID), and Pica. Of primary concern to the present study are the symptom patterns typically associated with the diagnoses of AN, BN, and BED; there have yet to be published systematic reviews relating to the diagnosis and treatment of Rumination Disorder, ARFID, or Pica (Levine & McVey, 2015).

**Anorexia Nervosa.** AN is characterized by significantly low weight (due to restriction of food intake relative to physical requirements), an intense fear of gaining weight or becoming fat, and the undue influence of body weight on self-evaluation (American Psychiatric Association, 2013). A recent systematic review of the epidemiology of eating disorders (Smink et al., 2012) suggests that incidence rates are highest in young women aged 15 to 19 (relative to other age groups). Furthermore, although the overall incidence of AN has remained relatively stable over the past several decades, rates have increased for women in the 15- to 19-year age group (Smink et al., 2012; van Son, van Hoeken, Bartelds, van Furth, & Hoek, 2006). The onset of AN in young women coincides with a bimodal distribution, with peaks in onset occurring during puberty (14.5 years of age), and in late adolescence (18 years of age; Halmi, Casper,

Eckert, Goldberg, & Davis, 1979). The pubertal peak in AN onset is consistent with research identifying puberty as a significant risk period for eating disorder development, likely due to interplay between various biological and psychosocial factors that are prominent during this period (Klump, 2013). For example, during puberty, young women may experience hormonal changes (Klump, 2013), increased body weight (particularly with earlier pubertal onset; Striegel-Moore et al., 2001), and increased body dissatisfaction (associated with increased exposure to thin-ideal media; Harrison, 2000). These peaks also represent periods of transition that may be particularly demanding or stressful (e.g., academic transitions from elementary to high school, and from high school to post-secondary), and are likely associated with the increases in independence and responsibility that accompany adulthood (Halmi et al., 1979). Lifetime prevalence of AN by the age of 20 years has been estimated to be 0.8% (Stice, Marti, & Rohde, 2013). This estimate is relatively consistent with the lifetime prevalence rate of 0.9% reported by Hudson and colleagues (2007) for female adults aged 18 years and older.

**Bulimia Nervosa.** BN is characterized by recurrent episodes of binge eating – consuming a very large amount of food during a discrete time period, accompanied by a sense of lack of control over food intake – and recurrent episodes of inappropriate compensatory behaviours, such as self-induced vomiting, fasting, and/or excessive exercise (American Psychiatric Association, 2013). Similar to AN, the incidence of BN is highest in 15- to 19-year-old women; contrastingly, however, the incidence of BN seems to have decreased since the early 1990s (Smink et al., 2012; van Son et al., 2006). Research also suggests that the typical age of onset for BN has decreased (see Smink et al., 2012 for review). From the year 1985 to the year 1999, the high-risk group for BN

onset had shifted from women aged 25 to 29 to women aged 15 to 24 years (van Son et al., 2006). Stice and colleagues (2013) reported the lifetime prevalence of BN by age 20 years to be 2.6%, an estimate slightly higher than that reported by Hudson et al. (2007) for female adults aged 18 and over (1.5%).

**Binge Eating Disorder.** BED typically involves recurrent episodes of binge eating (as previously defined) *without* the presence of compensatory behaviours. BED is also defined by eating at a rapid pace, eating until uncomfortably full, and feeling disgusted with oneself following a binge (American Psychiatric Association, 2013). Although less research exists on the incidence of BED, Stice and colleagues (2013) reported the incidence to be approximately 2.7% in a sample of female adolescents followed over an 8-year period (until the age of 20). In this same study, peak age of onset was determined to be between 18 and 20 years of age, and lifetime prevalence age by 20 years was reported to be 3.0% (Stice et al., 2013). This estimate is slightly lower than that reported by Hudson and colleagues (2007) for female adults (3.5%).

### **Disordered Eating**

Of interest to the present research, however, is not to *solely* describe the characteristics of young women with clinically diagnosable eating disorders (i.e., those meeting *DSM-5* criteria for diagnosis). By approaching disordered eating as occurring on a continuum (as assumed by the ecological prevention perspective of Levine and McVey, 2015), the primary aim of the present research is to understand young women who, to some extent, exhibit eating pathology. This perspective proposes that *DSM-5* eating disorders should be conceptualized as extremes of multiple (related) continua, including: negative body image, unhealthy weight control, weight and shape overvaluation,



irrational fear of body fat, self-surveillance and self-criticism, and binge eating (Levine & Smolak, 2006; Levine & McVey, 2015). According to this view, a person is likely suffering from disordered eating if: (a) his or her eating attitudes and behaviours generate disability and/or distress, and (b) he or she exhibits moderate to severe levels of several of these continua (Levine & McVey, 2015).

In general, previous research in the field has conceptualized disordered eating as a range of eating disorder related behaviours and cognitions that may (or may not) warrant clinical diagnosis. By this definition, disordered eating behaviours and associated attitudes (e.g., body dissatisfaction) have been found to be prevalent in populations of girls and women since the late 1980s (see Shisslak, Crago, & Estes, 1995 for review). In accordance with this, research conducted within the last decade has supported the existence of disordered eating in childhood (e.g., Dohnt & Tiggemann, 2005), adolescence (e.g., Neumark-Sztainer et al., 2006), and into adulthood (e.g., Solmi, Hatch, Hotopf, Treasure, & Micali, 2014). The focus of the present study is on young adults – specifically, women in the theorized stage of development known as “emerging adulthood” (Arnett, 2002; 2007). As such, the literature review will focus primarily on research exploring the development of disordered eating up to and including emerging adulthood.

**Childhood and preadolescence.** Although adolescence was initially targeted as the period of development accountable for the emergence of a desire for thinness, research suggests that the onset of disordered eating attitudes and behaviours occurs as early as childhood (Dohnt & Tiggemann, 2005; 2006). As young as 6 years of age, girls have been found to indicate a preference for a thinner ideal body figure (compared to

their current body figure; Dohnt & Tiggemann, 2005; 2006). Furthermore, this preference for thinness is accompanied by a conceptual understanding of dieting as a means to achieve thinness (Lowes & Tiggemann, 2003). In this study, age emerged as the sole significant predictor of dieting awareness, indicating that acquiring this knowledge (i.e., an understanding of using dietary restraint to achieve weight loss) may be part of the normative learning process for children growing up in modern-day society (Lowes & Tiggemann, 2003).

In childhood, social influences including parents (Phares, Steinberg, & Thompson, 2004), peers (Jones, Vigfusdottir, & Lee, 2004), and the media (Dohnt & Tiggemann, 2005) are thought to be instrumental in the development of disordered eating attitudes and behaviours. In terms of familial influences, having a family history of eating concerns has been found to be associated with disordered eating behaviours, feelings of body dissatisfaction, and a preference for thinness among preadolescent girls (e.g., Phares et al., 2004). In research focusing on the early emergence of dieting, it has been proposed that both parental modeling of disordered eating behaviours and parental communication of associated attitudes (e.g., making weight-related comments) influence the early development of disordered eating in children (e.g., Abramovitz & Birch, 2000; Balantekin, Savage, Marini, & Birch, 2014). Both paternal and maternal influences have been found to be influential in this respect (e.g., Field et al., 2001). For instance, research has found that preadolescent girls who perceived that their thinness was important to their *fathers* (as opposed to mothers) were more likely than their peers to become constant dieters (Field et al., 2001). Other studies have supported a role of maternal influence – for example, Abramovitz & Birch (2000) found that 5-year-old girls whose mothers reported

dieting were more than twice as likely as their peers to have ideas about dieting. Lastly, combined maternal and paternal influences seem to have a stronger impact on early childhood dieting than influence from either parental figure alone (Balantekin et al., 2014). Balantekin et al. (2014) found that girls who were encouraged to diet by *both* parental figures were eight times more likely to begin dieting by 11 years of age (relative to peers not encouraged to diet, and peers encouraged by only one parental figure). This effect was stronger than the effects found for girls encouraged to diet by mothers alone or by fathers alone (Balantekin et al., 2014).

Regarding the influence of peers, studies of young girls between the ages of five and seven have found that girls' perceptions of their friends' levels of body dissatisfaction are predictive of their own levels of body dissatisfaction (Dohnt & Tiggemann, 2005; 2006). The authors of these studies propose that body dissatisfaction in childhood may therefore be a function of norms for thinness shared by girls, even at such young ages (Dohnt & Tiggemann, 2005). At slightly older ages (i.e., during preadolescence), peer influences seem to be similarly important. For example, Phares and colleagues (2004) have also found that the development of disordered eating in preadolescent girls is associated with various forms of peer influence; namely, receiving negative messages from peers about one's body image, interacting with peers about weight and eating habits, and believing that thinness will increase likability.

Likely interacting with peer influences are various forms of media influence – for example, television and magazines – that communicate messages promoting the thin ideal to women and girls. Given that young children have been found to spend up to six hours per day exposed to forms of media (Jordan, 2004), the extent of media influence on the

development of disordered eating is essential to consider. Not surprisingly, research findings have indicated that the media significantly influences eating attitudes and behaviours even during childhood. For example, Dohnt & Tiggemann (2006) found that girls who reported watching more music television (i.e., music video shows, which often emphasize physical appearance) reported a greater awareness of dieting practices relative to girls who watched children's television programs. Harrison (2000) reported a more general effect of television watching, finding that increased television viewing in girls aged six to eight years was associated with higher levels of eating disorder symptomology. This effect was replicated in a longitudinal study of preadolescent girls – increased television watching (in general) was associated with increased eating disorder symptomology one year later and with preferences for a thinner post-pubescent ideal figure (Harrison & Hefner, 2006). Aside from television, magazines have also been found to be influential – Dohnt and Tiggemann (2006) found that girls who reported reading appearance focused magazines (intended for teenagers and adult women) reported greater awareness of dieting practices and greater body dissatisfaction (relative to those who read children's magazines; Dohnt & Tiggemann, 2006). To the author's knowledge, the influence of regular exposure to more recent forms of social media (e.g., Facebook, Instagram) on eating pathology in children has not yet been examined.

Finally, of recent interest is the impact of the education system on the development of disordered eating in school-aged children. Due to societal concerns about the “obesity epidemic”, a range of school based obesity-prevention programs have been developed with the primary aim of promoting healthy weight in children (e.g., Stice, Shaw, & Marti, 2006). These programs generally recommend consumption of low-fat

diets (Stice et al., 2006), lowering caloric intake, and increasing calorie burning through exercise in order to achieve a healthy weight (Pinhas et al., 2013). Although these programs have been found to be generally effective in preventing weight gain (Stice et al., 2006), there is concern that such healthy weight initiatives may trigger eating pathology for young adolescent children (e.g., Pinhas et al., 2013). In a series of cases, Pinhas et al. (2013) describe students (male and female) aged 13 and 14 years for whom the development of restrictive eating practices was triggered by the introduction of school-based healthy eating curricula. In all cases, students were motivated to achieve a healthier lifestyle as dictated by program recommendations. Over the course of several months, each of the previously healthy students engaged in increasingly restrictive dieting and excessive exercising; upon presentation to pediatric eating disorder programs, each student was diagnosed with an eating disorder, and the majority were admitted to hospital for stabilization (Pinhas et al., 2013). These cases highlight the potential danger of healthy-weight programs, as well as the need to communicate healthy living strategies in a manner that does not emphasize weight as the primary determinant of health (Pinhas et al., 2013). The potential risks inherent to these programs are likely exacerbated by the lack of disordered eating identification and prevention training available for teachers (Knightsmith, Treasure, & Smith, 2013; 2014). Although educators have expressed interest in disordered eating recognition and prevention training (Piran, 2004), the majority of teachers have not received such training (Knightsmith et al., 2014). In general, teachers report a lack of understanding of eating disorders as severe mental health issues, as well as a sense of discomfort with addressing students' eating concerns (Knightsmith et al., 2013; 2014). Given that school professionals are in an ideal position

to recognize the early symptoms of eating pathology, their lack of perceived efficacy in dealing with students' disordered eating issues is concerning.

**Adolescence.** The prevalence of disordered eating attitudes and behaviours has been well documented across adolescence and into emerging adulthood (e.g., Masuda, 2011; Meyer, 2005; Neumark-Sztainer et al., 2006; 2011; Schwitzer, Rodriguez, Thomas, & Salimi, 2001). Across studies, it seems as though weight-control behaviours (and associated attitudes) are rather normative among female adolescents (e.g., Jones et al., 2001; Meyer, 2001). For instance, research conducted with a Canadian sample of adolescents found that by the age of 18, 80% of girls reported wanting to lose weight, despite being in developmentally normal ranges for weight and height (McCreary Centre Society, 1999). Another study of Canadian schoolgirls found that disordered eating attitudes and behaviours tended to increase in prevalence across the span of adolescence, and by the age of 18, were reported by over one-quarter of girls in the sample (Jones et al., 2001). Although dieting to lose weight was the most commonly reported behaviour (reported by 23% of the sample), bingeing and purging by self-induced vomiting were also common (reported by 15% and 8.2% of girls, respectively; Jones et al., 2001). Similar results have been found with American adolescents (e.g., Neumark-Sztainer, 2006) – for example, Meyer (2001) found that 76% of female high school students reported a desire to lose weight, and approximately half of the sample reported some degree of disordered eating behaviour. Furthermore, recent research examining trends in disordered eating across time suggests that sexual minority (i.e., lesbian, gay, and bisexual) youth may be at particular risk for disordered eating issues in adolescence (Watson, Adjei, Saewyc, Homma, & Goodenow, 2016).

**Transition from adolescence to emerging adulthood.** In correspondence with evidence supporting a “peak” in eating disorder onset between the ages of 18 and 20 (e.g., Halmi et al., 1979; Stice, Marti, & Rohde, 2013), tendencies toward disordered eating do not appear to abate during the transition from adolescence into young adulthood. While terms denoting this developmental period have varied in past literature, Arnett (2000, 2007) has dubbed this period of gradual transition (spanning from the ages of 18 to 25, approximately) as “emerging adulthood”.

**Emerging adulthood.** Arnett’s (2000, 2007) theory proposes emerging adulthood as representing a distinct period of development between adolescence and young adulthood. Demographically, individuals in the developmental period of emerging adulthood share a high degree of heterogeneity and instability in terms of their residential status (e.g., residential location, marital status, etc.; Arnett, 2000). Subjectively, individuals in emerging adulthood tend to see themselves as neither fully adolescents nor adults, but rather somewhere between the two stages (Arnett, 2000). In terms of identity explorations, emerging adulthood is distinct in that it contains the most opportunity for an individual to explore his or her worldviews, choices in work, and choices in love (Arnett, 2000). It is this freedom to explore that separates emerging adulthood most clearly from adolescence, during which persons tend to live with their parents and attend secondary school, and from young adulthood, which implies that adulthood (and its associated stability) has begun (Arnett, 2000; 2007). Given that persons in emerging adulthood are thought to have distinctive developmental characteristics, studies that endeavour to assess disordered eating (and mental health in general) specifically in this population are warranted, as there may be unique implications for prevention, intervention, and

treatment that do not apply to other age groups (e.g., Dimitropolous, Tran, Agarwal, Sheffield, & Woodside, 2013).

*Disordered eating in emerging adulthood.* Research indicates that patterns of disordered eating in adolescence may set the stage for continued, and often more severe, disordered eating attitudes and behaviours in emerging adulthood (Allen, Byrne, Oddy, & Crosby, 2013; Neumark-Sztainer et al., 2006; Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). In a series of longitudinal studies spanning from adolescence into early adulthood, Neumark-Sztainer et al. (2006) found that adolescents using unhealthy weight-control behaviours (e.g., fasting, skipping meals, using food substitutes) were at higher risk for binge eating (with loss of control) and for extreme weight-control behaviours (e.g., self-induced vomiting, using laxatives, taking diet pills) five years later. At the ten-year follow up mark, the authors concluded that throughout adolescence and into emerging adulthood, dieting and disordered eating behaviours were highly prevalent (Neumark-Sztainer et al., 2011). Although the prevalence of most disordered eating behaviours remained relatively constant across adolescence, rates of extreme weight control behaviours (reported by 20% of girls in the sample) tended to increase with age (Neumark-Sztainer et al., 2011). In particular, the consumption of diet pills by girls in the sample rose from a rate of 6.5% in middle adolescence to 16.1% in emerging adulthood (Neumark-Sztainer et al., 2011). Additionally, disordered eating behaviours tended to show consistency within individuals across the ten-year span – that is, those who engaged in weight-control behaviours during adolescence were likely to continue throughout emerging adulthood. This consistency suggests that disordered eating may not exist as an isolated phase in adolescence, but rather might represent a



relatively enduring pattern of behaviour (Neumark-Sztainer et al., 2011; Allen et al., 2013).

As a note, the majority of cited studies did not continue to assess disordered eating past emerging adulthood; however, numerous studies support the continuance, or onset, of disordered eating in adulthood (e.g., Ackard, Richter, Frisch, Mangham, & Cronemeyer, 2013; Cachelin & Striegel-Moore, 2006; Cumella & Kally, 2008; Solmi et al., 2014). In fact, similar to prevalence rates among younger persons, studies suggest that rates of disordered eating among adult women aged 40 years and older have increased since the 1990s (Ackard et al., 2013; Cumella & Kally, 2008).

Female college and university students seem to represent an especially high-risk population of individuals in emerging adulthood. Findings from studies with these samples generally indicate disordered eating to be both prevalent (e.g., Bankoff, Valentine, Jackson, Schacht, & Pantalone, 2013; Meyer, 2005; Stein, Chen, Corte, Keller, & Trabold, 2013) and persistent across time (e.g., Neumark-Sztainer et al., 2011). On the most severe end of the disordered eating spectrum, rates of symptom presentations likely to warrant clinical eating disorder diagnosis have been found to range from 11% (Meyer, 2005) to 13.5% (Eisenberg et al., 2011). Not surprisingly, what seems to be more prevalent in female university students is the presence of disordered eating attitudes and behaviours (individually or in combination with one another; Meyer, 2005) that are unlikely to be diagnosable but are unhealthy in and of themselves (e.g., Levine & McVey, 2015). For example, Meyer (2005) found that more than two times as many female students (25%) were classified as “symptomatic” (i.e., exhibiting subclinical manifestations eating disorder symptomology) than as “eating disordered” (i.e.,

exhibiting symptomology likely to warrant clinical diagnosis). At a more microscopic level, certain studies with this population have focused on specific disordered eating attitudes and behaviours, as opposed to general clusters of symptomology. In an examination of compensatory weight-control behaviours, Bankoff et al. (2013) found that approximately 20% of female students had engaged in self-induced vomiting, laxative or diuretic use, and/or diet pills to facilitate weight loss. Regarding disordered eating attitudes, Eisenberg et al. (2011) found that 34% of female undergraduate students reported believing themselves to be fat despite others saying they are thin. Additionally, 26% of undergraduate females reported worrying about losing control over how much food they eat (Eisenberg et al., 2011). Although these studies relied strictly on retrospective self-report to measure the prevalence of these behaviours and attitudes, Stein and colleagues (2013) measured rates of disordered eating behaviours in the context of daily living by using ecological momentary assessment. Over a 14-day recording period, results indicated that 13.3% of women engaged in at least one bingeing episode, 13.6% engaged in purging behaviours, and 18% engaged in excessive exercise to control weight (Stein et al., 2013). The most common disordered eating behaviour was food restriction, reported by 48.1% of the sample (Stein et al., 2013).

In general, researchers have found eating pathology in female students to be fairly persistent over the course of college or university. In a randomly selected sample of university students, Eisenberg et al. (2011) found that eating disorder symptoms reported by female students at baseline predicted eating disorder symptoms two years later. Furthermore, female students' risk of screening positively for an eating disorder at follow-up increased with each additional eating disorder symptom reported two years

prior. Lending additional support to the persistence of disordered eating in emerging adulthood, Mills, Polivy, McFarlane, & Crosby (2012) also found that female students' eating pathology remained largely stable over the span of three academic years, showing little evidence of natural recovery without intervention. Students reporting disordered eating were not only heavier than their asymptomatic peers, but also experienced significant fluctuations in weight across the study span; the authors noted that such weight cycling may play a role in maintaining disordered eating (Mills et al., 2012).

The prevalence and persistence of disordered eating for women in emerging adulthood (and female post-secondary students in particular) is concerning from both individual health and societal perspectives. Firstly, disordered eating attitudes (e.g., negative body image, weight overvaluation, fear of body fat, self-criticism) and behaviours (e.g., food restriction, purging, binge eating) are inherently unhealthy in and of themselves (e.g., Levine & McVey, 2015). Secondly, these attitudes and behaviours tend to be associated with other unhealthy behaviours, such as binge drinking and tobacco use (Neumark-Sztainer et al., 2011; Stein et al., 2013) and with specific forms of psychopathology, including: depression, anxiety, non-suicidal self-injury, and suicidal ideation (Neumark-Sztainer et al., 2011; Mills et al., 2012; Stice et al., 2013). Thirdly, many disordered eating attitudes and behaviours (individually and in combination) represent risk factors for future clinical eating disorder development (e.g., Levine & McVey, 2015; Stice, Ng, & Shaw, 2010). Given that eating disorders are recognized as having the highest mortality rates of all psychological illnesses (e.g., Smink et al., 2012), it is absolutely essential that resources designed for prevention and intervention purposes are readily accessible to women in emerging adulthood.

**Disordered eating prevention and intervention.** Qualitative assessments of the need for disordered eating prevention and intervention programs in post-secondary settings have revealed that clinicians working in college-based health clinics currently devote a large proportion of time and resources to the treatment of disordered eating (Stice, Butryn, Rohde, Shaw, & Marti, 2013). Clinicians felt that by implementing effective intervention programs, the number of hours required to treat eating disorders may be reduced, thus allowing for adequate time and resources to treat other issues commonly experienced by college students (Stice et al., 2013). A meta-analytic review of eating disorder prevention and intervention programs developed in recent years found that 51% of programs successfully reduced eating disorder risk factors, and 29% reduced eating pathology (Stice, Shaw, & Marti, 2007). In an examination of moderators of intervention effects, Stice et al. (2007) found that programs that were: (a) selective (targeted at high-risk individuals, as opposed to universal); (b) offered to females, as opposed to both genders; (c) offered to individuals over 15 years of age; and (d) delivered by trained intervention professionals (as opposed to endogenous providers, such as teachers) produced larger effects. Regarding content, programs involving body acceptance (e.g., Masuda, 2011) and dissonance induction (to reduce internalization of attitudes and beliefs about the importance of being thin) produced larger effects for outcomes including body dissatisfaction, eating pathology, and dieting (Stice et al., 2007). In contrast to this, programs based on psychoeducational content produced weaker intervention effects across examined outcomes (Stice et al., 2007). Notably, a recent review conducted by Lewis-Smith, Diedrichs, Rumsey, & Harcourt (2016) found that factors associated with effective intervention for women in adolescence and emerging

adulthood (Stice et al., 2007) were consistent with those associated with positive treatment outcomes in women between the ages of 35 and 55. This suggests that aspects of programs associated with improvements in disordered eating may be relatively consistent across the span of development, although more research is needed in this area.

Although gaining a thorough understanding of the factors that moderate the effectiveness of intervention programs is essential to the development and implementation of current and future programs, this knowledge may be inconsequential if individuals do not choose to partake in these programs in real-world (e.g., post-secondary) settings (e.g., Atkinson & Wade, 2013). In general, rates of treatment utilization for disordered eating are remarkably low when compared to the number of individuals affected (e.g., Neumark-Sztainer et al., 2011; Hepworth & Paxton, 2007; Johnson, Cohen, Kasen, & Brook, 2002). Although some individuals with disordered eating issues do eventually seek some type of professional help (e.g., for an emotional or behavioural problem), only a minority of these individuals specifically seek help for disordered eating (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). Though a lack of awareness of the availability of disordered eating resources in post-secondary settings could be responsible for the scarcity of treatment seeking, a study by Tillman, Arbaugh, & Balaban (2012) suggests that this is likely not the only factor at play in this issue. By offering psychoeducational interventions aimed at increasing eating disorder awareness and help seeking, Tillman et al. (2012) found that students who attended an intervention reported knowing more about on-campus disordered eating resources than students who did not attend. Contrary to expectations, however, actual levels of help seeking did not differ based on attendance (Tillman et al., 2012). Thus, help seeking for

disordered eating will not necessarily increase despite an increase in students' knowledge of available resources; other factors are likely to be influential as well. Given the prevalence of disordered eating in female post-secondary populations, understanding young women's' perceptions of disordered eating, their attitudes towards seeking help (for mental health issues in general and disordered eating in particular), and the factors that influence their help seeking behaviour are of critical importance.

### **Help Seeking**

In the field of mental health, help seeking can be defined as seeking assistance or intervention for the resolution of a mental health problem; sources of help include professional mental health services (e.g., psychologist, social worker), other formal services (e.g., general practitioner, teacher), and informal sources such as family and friends (e.g., Srebnik, Cauce, & Baydar, 1996). Of interest to modern society, the Internet has been increasingly recognized as an outlet for self-disclosure of mental health issues (see Rowe et al., 2014 for review), as well as a source of mental health information and support (Burns, Durkin, & Nicholas, 2009; Gould, Munfakh, Lubell, Kleinman, & Parker, 2002). In general, research has indicated that the majority of young persons experiencing mental health issues will not seek help (e.g., Bergeron et al., 2005; Raviv, Raviv, Vago-Gefen, & Schacter-Fink, 2009; Rickwood, Deane, Wilson, & Ciarrochi, 2005). Of those that do seek help, informal sources such as family and friends are generally preferred over formal sources (e.g., Arria et al., 2011; Rickwood, Deane, & Wilson, 2007; Rickwood et al., 2005; Slone, Meir, & Tarrasch, 2013), although preferences for formal (professional) sources of help have been found to increase across adolescence (Sears, 2004). Research focused specifically on help seeking for disordered

eating (as opposed to general mental health issues) replicates these patterns. Across adolescence (Meyer, 2001), emerging adulthood (Meyer, 2005; Tillman & Sell, 2013), and adulthood (Solmi et al., 2014), the majority of female individuals exhibiting disordered eating attitudes and behaviours will not seek help. As with general mental health issues, individuals exhibiting disordered eating tend to prefer informal sources of help to formal sources of help across the lifespan (e.g., Meyer, 2001; Prouty, Protinsky, & Canady, 2002; Cachelin & Striegel-Moore, 2006).

**Stage Model of Help-Seeking.** The act of seeking assistance for a mental health problem from an external source (be it a formal source, such as a psychologist, or an informal source, such as a relationship partner) has been previously conceptualized as a multistage process (Kessler, Brown, & Broman, 1981). Attempting to explain the sex difference in help seeking for mental health issues (with women exhibiting a greater propensity to seek professional help for emotional issues than men), Kessler et al. (1981) separated the act of seeking help into three distinct stages: (a) problem recognition, (b) recognition of a need for help, and (c) actual obtainment of such help. The model proposes that voluntary contact with a mental health professional (stage 3) will only occur if preceded by an individual recognizing his/her symptoms as representing a mental health problem (stage 1), and furthermore believing that professional mental health services are needed for the resolution of the issue (stage 2; Kessler et al., 1981). By conceptualizing help seeking as involving these distinct stages, the researchers found that the higher rate of mental health service utilization by women could actually be explained by higher rates of problem recognition – that is, women were more likely than men to label their symptoms as representing a mental health problem (thus achieving the first

stage of the model; Kessler et al., 1981). This model, known as the Stage Model of Help-Seeking (Kessler et al., 1981), has endured across time as an explanation of the help-seeking process.

**Behavioural Model of Health Services Use.** The Behavioural Model of Health Services Use (Anderson & Newman, 1973; Anderson, 1995) is another primary model that explains the use of mental health services as a function of three interrelated constructs: (a) predisposing factors, (b) enabling factors, and (c) need factors. The facets of this model can be considered in combination with the Stage Model of Help-Seeking (Kessler et al., 1981) to facilitate understanding of how various predisposing, enabling, and need factors influence the recognition of mental health issues, the recognition of the need for professional help, and the actual seeking of help (e.g., Cometto, 2014).

***Predisposing factors.*** Predisposing factors are thought to influence an individual's propensity to seek help and to utilize mental health services. Such factors include demographics (e.g., age, gender), social structure (e.g., ethnicity, occupation), and attitudes/beliefs surrounding health (Anderson, 1995). Although demographic and social structure related factors are fairly immutable, beliefs surrounding health are thought to have a moderate level of mutability – that is, they have the potential to be altered and to influence behaviour (Anderson, 1995). For example, previous research has found that adolescents' ability to recognize their own mental health problems, decisions to seek professional help, and actual help-seeking behaviour were all predicted by their previous help-seeking experiences and perceptions of the severity of the problem (i.e., health beliefs; Cometto, 2014).



***Enabling factors.*** Enabling factors directly facilitate or impede mental health service use – for example, availability of health facilities (Anderson, 1995). Although under the umbrella of “enabling factors”, factors that impede mental health service use are more commonly referred to as “barriers” (e.g., Wilson & Deane, 2012). Barriers to help seeking are generally conceptualized as being either person-related – for example, perceived public stigma or a need for autonomy – or treatment-related – factors out of an individual’s control, such as costs for services or long waiting times (e.g., Wilson & Deane, 2012). Factors that facilitate or impede mental health service use are thought to have high mutability, and to be strongly associated with actual service utilization (Anderson, 1995). Research has found that adolescents with negative attitudes towards seeking mental health services also tend to perceive a greater number of barriers to help seeking (Cometto, 2014). Across studies, barriers to help seeking commonly endorsed by young people include a desire to solve their problems without outside intervention (i.e., desire for autonomy; Cometto, 2014; Wilson & Deane, 2012), a lack of knowledge of mental health resources (i.e., poor mental health literacy; Cometto, 2014; Jorm, 2000), and fears of stigma (Gulliver, Griffiths, & Christensen, 2010). Barriers reported by young people have also been found to differ according to one’s stage of help seeking (Cometto, 2014), symptom severity (e.g., Meyer, 2001), and the specific source of help being sought. For example, barriers specific to online help seeking include feeling overwhelmed by the amount of information available online (information overload) and concerns regarding the accuracy of online mental health information (Gowen, 2013).

Currently, little is known about how perceived barriers to help seeking may change during the transition between adolescence and adulthood (e.g., Wilson & Deane, 2012).

Given that emerging adulthood has been conceptualized as representing a developmental period distinct from both adolescence and subsequent young adulthood (Arnett, 2007), research on barriers to help seeking specifically focused on individuals in this developmental stage is needed.

*Need factors.* Lastly, need factors include both evaluated need and perceived need; evaluated need is based on professional judgment about one's need for services, whereas perceived need relies on an individual's own judgment regarding their pathology and resulting need for services (Anderson, 1995). Although evaluated need is largely immutable, perceived need has the potential to change (for example, as a result of mental health education efforts; Anderson, 1995). Previous research has indicated that adolescents who perceive their mental health issues to be more severe are more likely than their peers to recognize symptoms as representing a mental health problem, to decide to seek help, and to actually seek help (Cometto, 2014).

**Help seeking for disordered eating in emerging adulthood.** Given the prevalence of disordered eating in female individuals in emerging adulthood (e.g., Eisenberg et al., 2011; Meyer, 2005) and the potential risk for development into clinically diagnosable eating disorders (e.g., Patton et al., 1999), understanding the help-seeking tendencies of this population is of vital importance. Currently, estimates of help seeking for disordered eating in post-secondary samples are quite low – for example, of the students Eisenberg and colleagues identified as likely to have an eating disorder (13.5% of the sample), less than half perceived a need for professional help (second stage of help seeking; Kessler et al., 1981) and only 15% actually sought professional help (Eisenberg et al., 2011). These estimates are fairly consistent with other studies in the field – Meyer (2005) found that

over half (56%) of female students reporting eating pathology did not recognize the need for professional help, and only 18% sought psychological help. Mills et al. (2012) found even lower estimates – over the course of 2.5 years, none of the girls reporting disordered eating sought treatment. Regardless, when interpreting these statistics it is important to note that there may be a discrepancy between seeking professional help in general versus seeking professional help specifically for disordered eating. Previous studies have found that in samples of individuals reporting disordered eating, although some report seeking help for general mental health, only a small minority specifically seek services for their eating pathology (e.g., Swanson et al., 2011; Mond, Hay, Rogers, & Owen, 2007).

On the basis of these and other findings, the question of whether women in emerging adulthood are seeking help for their disordered eating has a fairly consistent answer – usually, help is not sought. The more pressing question now facing empirical researchers is – why not?

**Barriers to help seeking for disordered eating.** A logical place to begin to attempt to answer this question is to look to the research examining factors that tend to impede help seeking specifically for disordered eating. Because barriers are thought to: (a) be strongly associated with actual service use, and (b) have high potential for mutability (Anderson, 1995), research assessing barriers can allow for future intervention programs to target these factors directly, with the aim of increasing voluntary service utilization.

Research with female adolescents has found that girls reporting (some extent) of eating pathology most commonly endorse: (a) “problem is not worrisome enough to me”, (b) “don’t believe I have a problem at all”, and (c) “don’t want anyone to know” as reasons for not seeking help for their eating issues (Meyer, 2001). Although girls

classified as symptomatic (i.e., reporting some eating disorder symptoms but not enough to warrant diagnosis) and girls classified as disordered (i.e., satisfying diagnostic criteria for an eating disorder) ultimately identified the same barriers, they differed in the barrier most commonly endorsed. For girls classified as disordered, the most commonly reported barrier was not wanting anybody else to find out about their issues (perhaps due to a fear of stigma; Meyer, 2001). For girls classified as symptomatic, the most common barrier was not perceiving the problem as worrisome enough to merit professional help (Meyer, 2001).

The issue of eating pathology not being perceived as important or urgent is echoed in research conducted with women in emerging adulthood (e.g., Mond, Hay, Rogers, Owen, & Beumont, 2004). Consistent with her research with female adolescents, Meyer (2005) found that the majority of female university students reporting disordered eating symptomology did not feel that their behaviours warranted therapeutic intervention. The research of Eisenberg et al. (2011) reveals similar findings – female students with disordered eating commonly reported not needing professional intervention for their eating behaviours, and not having the time to seek such services. Students also expected their eating issues to resolve on their own (without outside intervention), and attributed them to the normal stress associated with college (Eisenberg et al., 2011). Perceptions of eating issues as lacking importance and urgency seem to extend also to those students who do not exhibit pathology themselves. When surveyed about participation in a potential eating disorders prevention program, Atkinson and Wade (2013) found that the majority of female students were generally uninterested and unlikely to participate, largely due to lacking the time to participate. For students more

concerned with their weight, the group format of the proposed intervention was also a significant deterrent to participation (Atkinson & Wade, 2013).

***Problem recognition.*** Across adolescence and emerging adulthood, research findings seem to converge to emphasize one factor as being particularly relevant to the absence of help seeking— that is, a lack of recognition of disordered eating as representing a problem that requires intervention. Despite all other factors that may impede the help-seeking process (e.g., stigma, need for autonomy), if the individual is unable to recognize her behaviour as problematic, she is unlikely to voluntarily seek help. Although Kessler et al. (1981) conceptualize problem recognition as the first necessary stage in the help seeking process, problem recognition may also be conceptualized as representing a barrier to help seeking in and of itself (e.g., Hepworth & Paxton, 2007; Vandereycken & Van Hubbleek, 2008). Previous research examining problem recognition has found that girls who self-reported as having a problem with eating (thus displaying problem recognition) had higher levels of eating disorder symptomology, higher levels of general distress, and tended to be heavier than girls who did not self-report having an eating problem (Mond, Hay, Rodgers, & Owen, 2006).

***Problem recognition and mental health literacy.*** The lack of recognition of disordered eating as representing a problem (both for oneself and for others) may be influenced by poor mental health literacy (e.g., Jorm, 2000; Jorm et al., 1997). In general, mental health literacy refers to having knowledge of and beliefs about mental health that aid in the recognition, management, and prevention of mental illnesses. Having sufficient mental health literacy can facilitate the recognition of specific illnesses and aid in appropriate help seeking (Jorm et al., 1997). Unfortunately, because much of the mental

health information available to the general public is inaccurate, attitudes and beliefs that can hinder appropriate help seeking are common (Jorm, 2000).

In general, there seems to be a problematic lack of accurate and specific knowledge about disordered eating in society. Studies with women in emerging adulthood have found that although most individuals have some knowledge of disordered eating, they tend to lack specific information regarding the symptoms of disordered eating, the prevalence of disordered eating, and the availability and efficacy of treatment options (e.g., Hunt & Rothman, 2007; Hay et al., 2007). Additionally, most individuals believe that only young women of Caucasian ethnicity are affected by eating disorders (Hunt & Rothman, 2007), a belief that has been shown to be largely inaccurate in empirical research (e.g., Cachelin & Striegel-Moore, 2006; Solmi et al., 2014).

Mental health literacy may also differ according to an individual's own eating pathology, as well as the specific disordered eating behaviour in question. For example, research has found that the attitudes and beliefs of women reporting bulimic-type symptoms differed from those of asymptomatic women on a range of issues concerning disordered eating (Mond, Hay, Rodgers, Owen, & Beaumont, 2004a). Notably, women reporting eating pathology themselves were more likely to overestimate the prevalence of bulimic-type behaviours in general population, and less likely to perceive available mental health services as being helpful (as compared to women reporting no disordered eating behaviours; Mond et al., 2004a). Furthermore, research by Gratwick-Sarll, Mond, & Hay (2013) revealed that attitudes and beliefs surrounding disordered eating may depend on the specific behaviour in question. In a sample of female post-secondary students, the only disordered eating behaviour independently associated with problem

recognition was self-induced vomiting (Gratwick-Sarll et al., 2013). Although overall eating pathology and prior treatment for an eating issue were also significantly associated with self-recognition of disordered eating, these findings suggest that only those eating issues involving self-induced vomiting are recognized as pathological (Gratwick-Sarll et al., 2013). This finding is concerning, as it suggests that women exhibiting other disordered eating behaviours – for example, dietary restriction – may be less likely to recognize their behaviour as problematic.

*Problem recognition and normalization.* The failure to recognize disordered eating behaviours other than self-induced vomiting (e.g., dietary restriction, excessive exercising, binge eating) as pathological may not only be influenced by mental health literacy, but also by the extent to which these behaviours are perceived as being acceptable by society. Over time, the shift in societal preference toward a thin physique has been associated with an increased prevalence of disordered eating in the general population (Striegel-Moore & Bulik, 2007). As early as several decades ago, both dieting (Polivy & Herman, 1987) and preferences for a thinner figure (Nelson & Gidycz, 1993) began to become normalized for women in North America. In particular, the media has played an especially influential role in the perpetuation of the female desire for thinness, mainly through its promotion of the importance of thinness and the disordered eating behaviours associated with its attainment (e.g., Anschutz, Spruijt-Metz, Van Strien, & Engels, 2011). Women and girls who internalize these thinness ideals – for example, peers (e.g., Eisenberg, Neumark-Sztainer, Story, & Perry, 2005), teachers (McVey, Tweed, & Blackmore, 2007), and family members (e.g., Abramovitz & Birch, 2000) – may then intentionally or unintentionally transmit (through role modelling or direct

commentary) disordered eating attitudes or behaviours onto other adults and children (e.g., McVey et al., 2007).

As time continues and the idealization of thinness persists, it is possible that disordered eating attitudes and behaviours may become normalized (i.e., not recognized as being abnormal or problematic) at exceedingly earlier ages. For instance, although dieting and associated weight-loss behaviours are common in emerging adulthood (Fayet, Petocz, & Samman, 2012) and thus possibly perceived as normal, the development of disordered eating may actually begin as early as childhood. For instance, by the age of five, girls have been found to have an awareness of and ideas about dieting (Abramovitz & Birch, 2000) and by nine years of age, begin to exhibit dieting behaviours themselves (Sinton & Birch, 2005). As disordered eating behaviours become commonplace among girls at increasingly earlier ages, it is possible that “normal” eating in childhood may soon be characterized by disordered eating.

*Problem recognition and denial.* When studying the issue of problem recognition as it relates to disordered eating, it is important to consider the theoretical conceptualization of denial. Although similar in meaning to problem recognition, the concept of denial has been extensively researched in relation to eating disorders (AN in particular; Vandereycken, 2006; Vandereycken & Vanderlinden, 1983). For the present study, the independent consideration of denial (as opposed to exclusive focus on problem recognition) is informative due to the conceptual distinction between two forms of denial: “denial as a psychological self-protection” (intentional denial) and “deficient self perception” (unintentional denial; Vandereycken, 2006, p. 352). The concept of intentional denial may be illustrated as a woman who recognizes her disordered eating



but engages in denial through refusal to admit the issue, perhaps due to fears associated with treatment or stigma (Vandereycken, 2006; Petterson, Rosenvinge, & Ytterhus, 2008). Accordingly, this hypothetical woman is likely to deny having an issue when completing a self-report measure, and results will therefore indicate a lack of problem recognition. This deliberate “secrecy” or concealment of disordered eating behaviours in women exhibiting eating pathology (particularly those with anorexia-type symptoms) is well documented in the literature (e.g., Basile, 2004; Vandereycken, 2006), and thought to be especially applicable to women exhibiting subclinical levels of disordered eating (Vandereycken & Van Humbeeck, 2008).

In contrast, the concept of unintentional denial is best illustrated as a woman who is truly unaware that her eating behaviours are disordered and/or represent a problem, perhaps due to an impairment in self-awareness, low insight, or a largely unconscious attempt to preserve self-esteem (Vandereycken, 2006; Vitousek, Daly, & Heiser, 1991). This hypothetical woman is also likely to deny having an issue, as she truly does not believe that an issue exists, and results of a self-report measure are therefore likely to indicate a lack of problem recognition. Supporting the concept of unintentional denial, a retrospective study assessing recognition of emergent eating disorders by Vandereycken & Van Humbeeck (2008) found that approximately half of female respondents reported not realizing the abnormality of their behaviour upon its onset. Although many women reported being familiar with the concept of eating disorders, they did not apply this label to themselves when their symptoms began (Vandereycken & Van Humbeeck, 2008).

Overall, self-reports of disordered eating are likely to be affected by both intentional and unintentional denial (e.g., Vandereycken & Vanderlinden, 1983).

Although the present study will not attempt to distinguish between intentional and unintentional denial when assessing problem recognition, it is valuable to be cognizant of the fact that problem recognition, or a lack thereof, may arise from distinct psychological origins (e.g., Vandereycken, 2006).

### **Perceptions of Disordered Eating and Associated Help Seeking**

To attempt to reduce the influence of denial on self-reports of disordered eating, Vitousek et al. (1991) recommend asking hypothetical third-person questions when assessing individuals' perceptions of their own eating pathology. Based on clinical experience, the authors suggest that persons with eating pathology tend to think more clearly and to provide less evasive responses to questions about their disordered eating when required to assume the perspective of a third-party observer (Vitousek et al., 1991). For instance, when asked about another (hypothetical) symptomatic person, a woman with eating pathology may display greater insight as to what might act as a trigger for her bingeing or purging episodes (Vitousek et al., 1991).

A study designed by Mond and colleagues (2010) employed the use of the third-person perspective (as suggested by Vitousek et al., 1991) by exposing participants to a fictional vignette describing a girl (Naomi) who exhibits disordered eating behaviours. Through exposure to Naomi's disordered eating experience, the study aimed to assess attitudes and beliefs of young women regarding the nature and treatment of Naomi's problem. Participants were then asked about specific facets of Naomi's behaviour, including the identification of her main problem, the perceived severity of her problem, and which interventions may be most helpful for her (Mond et al., 2010). Participants were also assessed in terms of their own eating attitudes and behaviours, and accordingly

classified as being at low risk for disordered eating, high risk for disordered eating, or as already displaying significant eating disorder symptomology (Mond et al., 2010). Results of the study indicated that perceptions of Naomi's eating pathology differed according to participants' own levels of eating pathology. Most notably, those at high risk for disordered eating and those already displaying significant symptomology were more likely than those at low risk to believe that Naomi would be discriminated against for her issue (perhaps representing a barrier to seeking help), and that she should conceal her problem (Mond et al., 2010). Symptomatic and high risk women were also more likely than low risk women to overestimate the prevalence of disordered eating in the population, and to believe that Naomi would experience a full recovery (Mond et al., 2010) – findings suggestive of poor mental health literacy. Finally, in terms of recognition of their own disordered eating, only half of the women who reported disordered eating symptoms believed that they might currently have an eating problem themselves (Mond et al., 2010), a finding consistent with more current disordered eating research that also employs fictional character vignettes (e.g., Gratwick-Sarll, Bentley, Harrison, & Mond, 2014; Gratwick-Sarll, et al., 2013).

Although studies using hypothetical character vignettes (e.g., Gratwick-Sarll et al., 2013; Mond et al., 2010) allow for the potential minimization of the effects of denial, this methodology (when used in isolation) may lack generalizability (e.g., Raviv et al., 2009). In the study by Mond et al. (2010), the beliefs reported by women regarding Naomi's problem (and their recommendations for Naomi in terms of seeking treatment) might not completely generalize to their self-perceptions of their own (current or future) eating issues. This potential lack of generalization is problematic if such research is to be

used to inform the development and implementation of disordered eating programs – although women might recommend certain actions to help Naomi (e.g., participating in a mental health prevention program), if faced with the same issue, they may not be willing to partake in such actions themselves. This hypothetical difference between how an issue (e.g., disordered eating) is perceived in oneself versus another, as well as the (recommended) actions that accompany these perceptions, will be broadly referred to in the present study as the self-other discrepancy.

**Self-other discrepancy.** Indications of the existence of a broad discrepancy between how an individual perceives herself versus how she perceives another individual are common and wide-ranging in psychological research. Many of these findings are centered on a discrepancy in susceptibility – susceptibility to the media, to certain biases, and to specific attitudes and behaviours. For example, Davidson’s (1983) “third person effect” hypothesis proposes the existence of a self-other discrepancy in our perceptions of susceptibility to the mass media. Specifically, Davidson proposes that individuals generally expect the mass media to have a stronger impact on other people than it has on themselves. Other research has supported a self-other discrepancy in perceptions of bias: Pronin, Lin, & Ross (2002) found that individuals are much more likely to perceive the existence of biases (e.g., the better than average effect) in other people as opposed to themselves. In terms of engaging in certain behaviours, Britton, Martz, Bazzini, Curtin, & LeaShomb (2006) found that although women expect other women to engage in “fat talk” dialogue (informal dialogue expressing body dissatisfaction), the majority stated that they themselves would not choose to engage in fat talk (indicative of a self-other discrepancy in susceptibility to a social behavioural norm). Finally, in an example of a self-other

discrepancy to susceptibility to certain help seeking attitudes, Pederson and Paves (2014) found that although post-secondary students felt that they would be viewed negatively by other people for seeking treatment for a mental health issue, they did not feel that they themselves would display such stigma towards another person. Given the wide-ranging support for a general discrepancy between perceptions of oneself versus perceptions of another, it can be said that (as in the case of Naomi in Mond et al., 2010) the way in which an individual perceives another person's eating patterns (e.g., as being normal, as representing a problem, etc.) may be discrepant from the way in which the same eating patterns would be perceived in oneself.

*Theoretical foundations of the self-other discrepancy.* Support for the self-other discrepancy also exists in research examining the advice individuals provide to others versus the actions they take themselves (e.g., Howell, Sweeny, & Shepperd, 2014; Kray & Gonzalez, 1999; Trope & Liberman, 2010). The tendency for individuals to recommend behaviour for others that is discrepant from what they themselves would personally be willing to do in a similar situation is also known as action hypocrisy, and has been demonstrated across various populations and contexts (e.g., Howell et al., 2014). Research examining this discrepancy suggests that when an individual is recommending a course of action for another person, he or she will consider fewer (and more salient) attributes than if making the decision for his or herself (Kray & Gonzalez, 1999). To illustrate this, Kray and Gonzalez use the example of a woman deciding whether or not to leave an abusive relationship. While debating this decision, the woman is likely to consider a variety of relevant factors – for example, the opinions of her family members, her financial situation, and the safety of herself and her children. An outside observer

offering advice to the woman, however, is likely to consider only the most salient factor(s) (i.e., safety) when advising the woman, and ultimately recommend the action that favours this factor (i.e., leaving the relationship; Kray & Gonzalez, 1999).

The findings of Kray and Gonzalez (1999) are consistent with the assumptions of Construal Level Theory (CLT; Trope & Liberman, 2010). CLT operates on the assumption that making choices for oneself and making choices for another individual (i.e., offering advice) involve different levels of psychological distance. Psychological distance is considered to be egocentric, with its reference point being the present self. With this logic, an individual makes choices for another individual (in the past, present, or future) at a greater psychological distance than that from which choices for oneself (in the past, present or future) are made (Trope & Liberman, 2010). When the psychological distance at which the choice is made is greater (i.e., further away from the egocentric reference point), problems are mentally construed at a higher and more abstract level, and thus only central features of the decision are retained (e.g., in the abusive relationship example, safety; Trope & Liberman, 2010). By contrast, when psychological distance is lesser (e.g., when making a choice for one's future self), problems are mentally construed at a lower and more concrete level, retaining the incidental features and more pragmatic considerations (e.g., in the relationship example, opinions of family members and one's financial standing; Trope & Liberman, 2010). Supporting CLT (Trope & Liberman, 2010), a series of studies conducted by Danziger, Montal, and Barkan (2012) found that people giving advice to others (greater psychological distance) were more influenced by idealistic considerations consistent with a high mental construal level, whereas people making choices for themselves (lesser psychological distance) were more influenced by

pragmatic considerations consistent with a low mental construal level. Nevertheless, as suggested by Howell et al. (2014), the discrepancy between what we recommend for others and what we would be willing to do ourselves is likely not applicable in all instances. The authors suggest that the tendency for individuals to recommend behaviour for others that is discrepant from what they would personally be willing to do in a similar situation is most likely to occur if: (a) the recommended action is optional, (b) the recommended action is not pragmatic, and (c) the recommended action does not lead to a desired outcome (Howell et al., 2014).

With regards to assessing perceptions of disordered eating through a hypothetical character vignette (e.g., as in Mond et al., 2010), it is important to address the potential role of a self-other discrepancy if the findings are intended for use in the development and implementation of disordered eating intervention programs. In general, research findings have highlighted various instances in which there tends to be a discrepancy between how an individual perceives oneself versus how he or she perceives others in similar situations (e.g., Pronin et al., 2002; Britton et al., 2006). Although (to the author's knowledge) research has not yet been conducted regarding a potential self-other discrepancy in problem recognition for various mental health issues, this possibility cannot be ruled out. If such a discrepancy was to exist, an individual labelling a constellation of symptoms as representing a mental health issue (such as disordered eating in the case of Naomi in Mond et al., 2010) may not label a similar constellation of symptoms as representing disordered eating in his or herself. Based on research highlighting a discrepancy between the choices we make for ourselves and the advice we give to others (e.g., Howell et al., 2014), there is a notable possibility that individuals

may recommend help-seeking behaviour for a hypothetical character that they would personally be unwilling to partake in.

*Self-other discrepancy and help seeking.* Currently, there have been few empirical attempts to assess for a potential self-other discrepancy in seeking help for mental health issues – that is, whether there is a difference between individuals’ willingness to recommend mental health services to others, versus their willingness to refer themselves to the same services. Focusing on adolescents with general mental health issues, previous research has found that adolescents were more likely to refer friends exhibiting symptoms of mental illness to a psychologist than to seek help from a psychologist themselves (Raviv, Sills, Raviv, & Wilansky, 2000; Slone et al., 2013). To examine the discrepancy between self-referral and other-referral, Raviv et al. (2000) required participants to read a vignette about a hypothetical character experiencing emotional difficulties. To measure other-referral, half of the participants in the study were assessed according to their degree of willingness to refer the character for (informal or formal) help. To measure self-referral, the other half of the participants were asked to imagine that they were experiencing similar difficulties (as described in the vignette) and assessed according to their degree of willingness to seek help (Raviv et al., 2000). In general, adolescents were more willing to seek help for their peers than for themselves (Raviv et al., 2000). A within-subjects replication of this study (Raviv, Raviv, Vago-Gefen, & Fink, 2009) replicated these findings, strengthening support for the existence of a self-other discrepancy in willingness to seek help for a mental health issue. The authors (Raviv et al., 2009) attributed the discrepancy in willingness to seek help for another versus oneself (as termed by the authors, a “personal service gap”) to the influence of



self-relational biases, and specifically the concept of illusory superiority – the tendency to believe that one’s positive qualities are greater than those of others (Brown, 1986). Consistent with this, findings of the study by Raviv et al. (2009) indicate that participants generally felt that they were better able to cope with mental health issues alone (i.e., without informal or formal help) as compared to their peers. Furthermore, participants’ perceived ability to cope with mental health issues alone was positively related to perceiving barriers to seeking help, and negatively related to willingness to seek psychological help (Raviv et al., 2009). Although this research provides valuable information regarding the self-other discrepancy for seeking help for general mental health issues, there is little research specifically focused on seeking help for disordered eating issues. What research has been done, however, suggests that a discrepancy may exist in emerging adulthood populations. In a study of eating disorders and help-seeking behaviours in a college setting, students reported that they would be more likely to seek help for a friend with an eating disorder than for themselves if they were experiencing an eating disorder (Tillman & Sell, 2013).

When the findings of Tillman and Sell (supporting a tentative self-other discrepancy in seeking help for disordered eating) are considered in combination with previous research using disordered eating vignettes (Mond et al., 2010) and research comparing self-referral with other-referral (Raviv et al., 2000; Raviv et al., 2009), together these studies represent a starting point from which we can further our understanding of the complexities surrounding seeking help for disordered eating in emerging adulthood. By using character-focused and self-focused vignettes (as in Raviv et al., 2000 and Raviv et al., 2009) that are centred on disordered eating symptoms (as in

Mond et al., 2010), we can assess whether a self-other discrepancy exists for female students' help-seeking beliefs. In addition to answering this question, a more comprehensive understanding of the factors that contribute to one's decision to seek help for disordered eating (whether it be for oneself or for another individual) is needed. For example, what are the most commonly perceived barriers to seeking help for disordered eating in an emerging adulthood population? Are certain sources of professional help preferred to others? Do barriers, preferences, and problem recognition differ when perceiving (hypothetical) eating patterns in oneself versus another individual? In addition to assessing perceived barriers, help seeking preferences, and the recognition of eating behaviours as being disordered, additional factors of interest include problem severity, previous help-seeking experiences, and perceived ability to cope with disordered eating without help. Do these factors tie in to one's decision to seek help for oneself or for another, and if so, how do they contribute to this decision?

### **The Present Study**

The purpose of the present study was to attain a more in-depth understanding of the factors that influence help seeking for disordered eating in emerging adulthood. The design was informed by an amalgamation of previous research on perceptions of disordered eating and related help-seeking behaviours (Mond et al., 2010) and research on the discrepancy between individuals' willingness to refer themselves versus others for professional help with a mental health issue (e.g., Raviv et al., 2000; Raviv et al., 2009). The present study focused on emerging adulthood as the population of interest – specifically, female university students ranging in age from 18 to 25 years. Although initial patterns of disordered eating attitudes and behaviours are thought to emerge as

early as childhood (Dohnt & Tiggemann, 2005) and preadolescence (Phares et al., 2004), research indicates that rates of disordered eating tend to increase during the developmental stage of emerging adulthood (e.g., Halmi et al., 1979; Eisenberg et al., 2011). Disordered eating attitudes and behaviours are thought to be both highly prevalent (e.g., Bankoff et al., 2013) and persistent (e.g., Neumark-Sztainer et al., 2011) during this stage, showing little evidence of natural recovery without intervention (e.g., Mills et al., 2012).

Although the prevalence of disordered eating also seems to increase for boys in emerging adulthood (Neumark-Sztainer et al., 2011), the present study included only female participants. Across studies, disordered eating issues have been found to be more common in the female gender relative to the male gender (Neumark-Sztainer et al., 2011; Smink et al., 2012); furthermore, when disordered eating issues do arise in boys and men, the symptom presentation is often discrepant from that found in girls and women (see Striegel-Moore & Bulik, 2007 for review). Ultimately, the applied value of the present study is rooted in the potential of the knowledge gained to inform the development of disordered eating intervention programs, which tend to be most successful (i.e., have stronger effects) when designed specifically for the female gender (Stice et al., 2007). This is not to dismiss the importance of gaining a more intricate understanding of disordered eating in boys and men, but rather to emphasize that disordered eating in the male gender is likely to be most effectively studied through research designs specifically intended for this purpose.

Based on the between-subjects study design of Raviv and colleagues (2000), the present study involved the exposure of participants to one of two hypothetical vignettes

(based on those developed in Mond et al., 2010) designed to assess perceptions of disordered eating behaviour and beliefs about help seeking for disordered eating. Although this research question could be assessed through the implementation of a within-subjects design, allowing for the direct comparison of perceptions of the self and other within each participant, previous research using a within-subjects design to address a similar research question experienced a main effect of order of the vignettes (Raviv et al., 2009). In their study, Raviv et al. found that the order in which the self-referral and other-referral vignettes were presented had a significant effect on participants' responses; thus, to avoid this methodological issue, the present study employed a between-subjects design. The two versions of the vignettes, self and other, are identical apart from the main character – in the self-referral condition, the main character is the participant herself; in the other-referral condition, the main character is a (fictional) female university student named Lauren. In both vignettes, the main character exhibits the exact same symptoms of disordered eating. The key difference between the conditions is the subject of the participants' perceptions: in the self-referral condition, the participant is intended to perceive the behaviour as if she herself is exhibiting it; in the other-referral condition, the participant is intended to perceive the character's behaviour as a third-party observer.

Following exposure to either the self or other vignette, participants were asked a series of questions regarding the character's (who is either Lauren or the participant herself) disordered eating symptoms and help seeking preferences. Specifically, participants were asked about the nature and severity of the character's problem, whether the character should seek help, the character's capability of coping with the issue alone, the character's preferred sources of help, and perceived barriers to help seeking. As in

previous research (e.g., Mond et al., 2010), participants were also assessed in terms of their own eating pathology and whether they believe they might currently have an issue with their eating or food-related behaviours. Lastly, participants were assessed in terms of their general attitudes towards seeking professional help and their general perceptions of barriers to seeking help.

**Research questions and hypotheses.** The present study represents one of the initial attempts in the field to attain a deeper and more fine-tuned understanding of help seeking for disordered eating in emerging adulthood. Although research has been done on each of the individual components (e.g., general help seeking, disordered eating), little is known about how each of these components and their associated factors combine to form the unique question of how young women decide to seek help (or not to seek help) for disordered eating. Previous research that has attempted to answer this question (e.g., Mond et al., 2010), has only considered it from the perspective of a young woman as a third party observer to a hypothetical character's disordered eating issue. Although this allows for an understanding of: (a) how women in emerging adulthood perceive disordered eating in *another* female individual; (b) whether young women believe this individual should seek help; (c) the barriers and preferences for help seeking that young women feel this individual would identify with; and (d) how the eating behaviours of these young women might influence their perceptions of (a) through (c), important questions remain unanswered. Namely, the issue of whether young women perceive disordered eating and preferences for help seeking in another individual differently than they would perceive the same issue in themselves remains unclear. If the information derived from studies that consider disordered eating from a third-party observer

perspective (as in Mond et al., 2010) is to be used to inform the development and implementation of eating disorder intervention programs, it is essential to understand whether any sort of self-other discrepancy exists. Without attempting to answer this question through empirical research, we run the risk of developing interventions based on empirically derived information that may not accurately represent the female individuals who need these programs.

Although the question of how young women determine whether or not to seek help for disordered eating is intricate and complex, each of variables assessed in the present study (e.g., problem recognition, perceived severity, perceived ability to cope, barriers, preferences, and the self-other discrepancy) represents an important piece in contributing to our overall understanding of this issue. The present study endeavoured to accurately assess each of these factors, and ultimately attempts to organize the pieces into some semblance of a coherent and organized whole.

Given the early stage of development of the present research, there are many exploratory research questions the study attempted to answer, and few directional hypotheses based on both theory and research. The following exploratory research questions pertain to the influence of participants' own disordered eating on perceptions of the vignette. Consistent with the findings of Mond et al., (2010), it was predicted that the attitudes and beliefs of participants would differ (for at least some of the questions posed below) according to participants' own eating pathology:

1. Will participants' own degrees of eating pathology influence: (a) recognition of their own disordered eating, and/or (b) recognition of the vignette character's disordered eating?

2. Will participants' own degrees of eating pathology influence: (a) participants' help seeking beliefs (i.e., whether the character should seek help), (b) preferred sources of help (i.e., people/activities thought to be helpful for the character), and (c) perceived barriers to seeking help (i.e., factors that might prevent the character from seeking help)?
3. Will participants' own degrees of eating pathology influence: (a) perceptions of the severity of the character's problem, and (b) perceptions of the character's ability to cope with the problem alone?
4. Will participants' own degrees of eating pathology influence: (a) participants' general attitudes towards help seeking, and (b) general perceptions of barriers toward help seeking?

The following exploratory research questions specifically pertain to the influence of reading a vignette about the (hypothetical) disordered eating behaviours of oneself ("self" condition) versus reading about the disordered eating behaviours of another individual ("other" condition). Based on previous research supporting a self-other discrepancy in willingness to seek help for general mental health issues (e.g., Raviv et al., 2000), it was expected that differences between the groups would exist for at least some of the following questions:

5. Will participants in the self and other conditions differ in terms of their recognition of vignette character's disordered eating?
6. Will participants in the self and other conditions differ in terms of: (a) the number and nature of preferred sources of help (i.e., people/activities thought to be helpful

for the character), and (b) the number and nature of perceived barriers (i.e., factors that might prevent the character from seeking help)?

7. Will participants in the self and other conditions differ in terms of: (a) their perceived severity of the character's disordered eating, and (b) perceptions of the character's ability to cope with the problem alone?

A final exploratory research question pertained to the elaboration of the potential influence of perceived barriers on participants' beliefs about help seeking for disordered eating. Although barriers to help seeking have been examined in relation to disordered eating in a sample of female adolescents (Meyer, 2001), the association between perceived barriers and beliefs about help seeking for women in emerging adulthood is currently unclear. Accordingly, the following research question was posed:

8. Will the number and nature of barriers perceived by participants' be related to participants' beliefs regarding whether the character should seek help?

Finally, based on research supporting the self-other discrepancy in help seeking for general mental health issues in adolescence (Raviv et al., 2000; Raviv et al., 2009; Slone et al., 2013) the follow hypotheses were made:

1. In terms of help seeking beliefs, it was predicted that participants will believe more strongly that the vignette character should seek help for her behaviour when the character represents another female individual (i.e., other condition), as opposed to the participant herself (i.e., self condition).
2. The perceived severity of the character's issue will be positively related to the participants' help seeking beliefs (i.e., whether the character should seek help).



3. The perceived ability of the character to cope with the issue alone will be negatively related to participants' help seeking beliefs (i.e., whether the character should seek help).

## CHAPTER 2

### Method

#### Participants

Female undergraduate students between the ages of 18 to 25 and enrolled at the University of Windsor were recruited for participation in the present study through the Department of Psychology participant pool. Participation was restricted to women primarily because: (a) disordered eating issues are more prevalent among women (e.g. Smink et al., 2012), and (b) disordered eating issues tend to be expressed differently in boys and men (e.g., Striegel-Moore & Bulik, 2007). For compensation through the participant pool, students were required to be registered in a psychology course and registered in the pool during the Winter semester (specified enrolment period).

Two-hundred and four participants completed the study online; of these,  $N = 198$  were determined to have valid data ( $n_{\text{self}} = 98$ ,  $n_{\text{other}} = 100$ ) and were included in the final sample for analysis (prior to the exclusion of outliers; see Results section). The mean age of these 198 participants was 20.08 years ( $SD = 1.58$ ,  $Min. = 18.00$   $Max. = 25.00$ ), and the mean body mass index (BMI) was 24.09 ( $SD = 5.67$ ,  $Min. = 11.46$ ,  $Max. = 53.12$ ), which is within the normal range (Centre for Disease Control and Prevention, 2015). In terms of marital status, 87.9% reported themselves to be single, 3.5% reported being married, and 6.1% reported their marital status as being “other”, with all text responses indicating that these participants were in committed relationships. In terms of self-reported race and ethnicity, 63.1% identified as White, 10.1% as Arab, 9.1% as Black, 7.1% as South Asian, 4.5% as Chinese, 2.0% as Filipino, 1.0% as Latin American, 0.5% as West Asian, and 2.0% as “other”. The majority (94.4%) of participants reported being

full-time university students; 27.3% reported being in first year, 22.2% in second year, 26.3% in third year, 19.7% in fourth year, and 4.5% in fifth year. 71.2% of the sample reported being employed. Of these participants, the majority reported being employed on a part-time basis, working on average 17.89 hours per week ( $SD = 14.43$ ,  $Min. = 4$ ,  $Max. = 115$ ). In terms of living arrangements, the majority of participants reported living with their parents (61.6%), 8.6% in residence on campus, and the remainder reported living off-campus (with and without roommates). 92.9% reported having a regular source of medical care (i.e., a family doctor). Finally, in terms of psychological help-seeking, 12.1% of participants reported currently using mental health services, and 34.3% reported having used the services in the past.

## **Measures**

**Demographics.** All participants completed a demographics questionnaire asking about: age, gender, marital status, weight and height, ethnicity, year in program, current employment, current living situation (i.e., who the participant lives with), access to medical care, and current or previous use of professional mental health services (see Appendix A).

### **Disordered eating.**

***Eating Disorder Examination (EDE-Q 6.0;*** Fairburn & Beglin, 1994, 2008). The EDE-Q is a self-report version of the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993), an investigator-based interview considered to be the “gold-standard” for identifying persons at risk for clinically diagnosable eating disorders (e.g., Berg, Peterson, Frazier, & Crow, 2011; Quick & Byrd-Bredbenner, 2012). The EDE-Q is commonly used in lieu of the EDE due to the limitations inherent to the interview version

– namely, the costs associated with its administration (training is required) and the time required for administration (Fairburn & Beglin, 1994). Additionally, the EDE is considered intrusive in the sense that admitting to disordered eating behaviours (e.g., purging) may be embarrassing for interviewees (Fairburn & Beglin, 1994). In contrast to the EDE, the EDE-Q does not require training for administration, takes less than 15 minutes to complete, is not as intrusive (due to the self-report format), and is easier to score (Fairburn & Beglin, 1994). Accordingly, the EDE-Q is commonly used to assess attitudes and behaviours associated with disordered eating in both clinical and non-clinical samples (e.g., Quick Byrd-Bredbenner, 2012).

The EDE-Q 6.0 (Fairburn & Beglin, 2008) consists of 28 items that assess the nature and frequency of disordered eating attitudes and behaviours over the past 28 days. The four subscales of the EDE-Q – Restraint, Eating Concern, Shape Concern, and Weight Concern – are made up of 23 items answered on a 7-point Likert scale from 0 to 6, where 0 is *no days, not at all, or none of the times* and 6 is *everyday, markedly, or every time*. The remaining five items assess the frequency of binge eating and associated compensatory behaviours (e.g., vomiting, laxative misuse, and excessive exercise). The Restraint subscale contains five items measuring restrained eating, such as “On how many of the past 28 days have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?” The Eating Concern subscale contains five items measuring preoccupation with eating and food, such as “On how many of the past 28 days have you had a definite fear of losing control over eating?” The Shape Concern subscale contains eight items measuring dissatisfaction with shape, such as “Over the past 28 days, has your shape influenced how

you think about (judge) yourself as a person?” Finally, the Weight Concern subscale contains five items measuring dissatisfaction with body weight, such as “Over the past 28 days, how dissatisfied have you been with your weight?” Subscale scores reflect the severity of each particular aspect of disordered eating, and are obtained by calculating the mean of all relevant items for each subscale. Higher scores on the individual subscales are indicative of more severe engagement in dietary restraint, and/or greater concern with eating, shape, or weight (depending on the subscale). To calculate a global score (used in the present analyses), the subscale scores are summed and divided by the number of subscales. Higher global scores are indicative of more severe disordered eating psychopathology.

Regarding reliability of the EDE-Q, in past research the internal consistency of the individual subscales has been found to range from acceptable to excellent (Cronbach alpha coefficients ranging from .73 to .90; Luce & Crowther, 1999; Mond, Hay, Rodgers, Owen, & Beumont, 2004b; Ro, Reas, & Lask, 2010). For the global score, Cronbach alpha coefficients have indicated excellent internal consistency (Luce & Crowther, 1999; Mond et al., 2004b; Ro et al., 2010). Additionally, re-testing conducted over a 2-week interval has indicated good test-retest reliability for the individual subscales (Spearman correlation coefficients ranging from 0.82 to 0.91) and excellent test-retest reliability for the global score (Spearman correlation coefficient = 0.93; Luce & Crowther, 1999). Research conducted with a longer test re-test interval (median = approximately 315 days) has found that items of the EDE-Q that assess attitudinal features of disordered eating (i.e., items making up the subscale scores and global score) demonstrate a high degree of temporal stability (Mond et al., 2004b). Although temporal stability has been found to be

lower for items assessing disordered eating behaviours (as opposed to attitudinal features), this may in part reflect actual variation in the occurrence of the behaviours (Mond et al., 2004b). In terms of validity, studies have found a high level of agreement (convergence) between scores on the EDE and scores on the EDE-Q, indicating that the versions measure similar constructs (Berg et al., 2011; Fairburn & Beglin, 1994; Mond, Hay, Rodgers, Owen, & Beumont, 2004c). Additionally, on the basis of subscale scores (Mond et al., 2004c) and the global score (Aardoom, Dingemans, Slof Op't Landt, & Van Furth, 2012), the EDE-Q has been found to successfully discriminate between clinically significant cases (i.e., individuals satisfying diagnostic criteria for an eating disorder) and non-cases (i.e., individuals not satisfying diagnostic criteria). In the present study, Cronbach's alpha for the global score was 0.96, indicative of excellent internal consistency. Furthermore, global scores on the EDE-Q were significantly positively correlated with total scores on the BCQ ( $r = .81, p < .01$ ) and the EAT-26 ( $r = .73, p < .01$ ), indicative of convergent validity.

***Eating Attitudes Test (EAT-26;*** Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 is a widely used self-report measure of symptoms and concerns characteristic of eating pathology. The EAT-26 has 26 items forming three subscales: Dieting (13 items), Bulimia & Food Preoccupation (six items), and Oral Control (seven items). Items are rated on a 6-point scale ranging from 0 (*never*) to 3 (*always*). Sample items include: “Aware of the calorie content of the foods that I eat” (Dieting subscale), “Vomit after I have eaten” (Bulimia and Food Preoccupation subscale), and “Cut my food into small pieces” (Oral Control subscale). Subscale scores are computed by summing the scores of all items assigned to each of the three subscales. Total scores range from 0 to 78, and are

computed by summing the scores of all 26 items. Total scores of 20 or above are associated with disordered eating attitudes and behaviours, and may be indicative of an eating disorder. Previous studies using the EAT-26 as a general measure of eating pathology have used the recommended cut-off score of 20 to dichotomize individuals into probable diagnosis and probable non-diagnosis groups (e.g., Prouty, Protinsky, & Canady, 2002).

Previous research has found the internal consistency of the EAT-26 measure to be high (Cronbach alpha coefficient = .90, Garner et al., 1982; mean Cronbach alpha coefficient = .86, Gleaves, Pearson, Ambwani, & Morey, 2014). Using the cut-off score of 20, the EAT-26 has also been found to demonstrate criterion validity by discriminating (with a 90% accuracy rate) between women who satisfy diagnostic criteria for an eating disorder and those who do not (Mintz & O'Halloran, 2000). There is also empirical support for using the EAT-26 as a continuous measure of eating pathology in nonclinical samples (i.e., without applying the cut-off score), as research has found increasing scores on the EAT-26 to be associated with more severe eating pathology (Mintz & O'Halloran, 2000). In the present study, the EAT-26 was included as an additional measure of eating pathology to assess for concurrent validity with EDE-Q scores (see previous section). Due to experimenter error, three items (11, 12, and 13) were unintentionally excluded from administration of the EAT-26. As these items factor into the total score, the EAT-26 was not used in final data analyses. Despite the missing items, Cronbach's alpha for the EAT-26 total score was 0.83, indicative of good internal consistency.

***Body Checking Questionnaire (BCQ)*** (Reas, Whisenhunt, Netemeyer, & Williamson, 2002). The BCQ is a 23-item self-report measure assessing the nature and

frequency of body checking behaviours. The measure takes approximately five to 10 minutes to complete. The BCQ contains three correlated subfactors: checking related to overall appearance (10 items), checking related to specific body parts (eight items), and idiosyncratic checking rituals (five items). Items are rated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*). Items from each of the subfactors include: “I check my reflection in glass doors or car windows to seek how I look” (overall appearance), “I look to see if I have cellulite on my thighs when I am sitting” (specific body parts), and “I check to make sure my rings fit the same way as before” (idiosyncratic checking). Scores for each of the three subfactors are calculated by summing all relevant items. For a total BCQ score, all items on the measure are summed, with higher scores reflecting greater frequency of body checking. The BCQ total scale demonstrates excellent internal consistency ( $r = .95$ ); internal consistency levels for the subfactors range from adequate to excellent ( $r_s = .76 - .91$ ; Reas, White, & Grilo, 2006). Test-retest reliability of the measure (over a 2-week testing interval) has also been found to be excellent (Reas et al., 2002). In terms of validity, the BCQ demonstrates convergent validity by correlating positively with the EAT-26, a measure of eating pathology (Reas et al., 2002). The present study assessed for convergent validity between scores on the BCQ and scores on the EDE-Q ( $r = .81, p < .01$ ). In the present study, Cronbach’s alpha for the global score was 0.95, indicative of excellent internal consistency.

### **Help seeking.**

*Attitudes Towards Seeking Psychological Professional Help – Short Form (ATSPPH-SF; Fischer & Farina, 1995).* The ATSPPH-SF is a ten-item self-report questionnaire that measures attitudes towards traditional counselling services. Items are



rated on a 4-point Likert scale ranging from 0 (*agree*) to 3 (*disagree*), and include statements such as “If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in psychotherapy”. Higher scores on the ATSPPH-SF indicate more positive attitudes toward seeking professional help for mental health issues. Scores on the ATSPPH-SF correlate highly ( $r = .87$ ) with scores on the original 29-item scale (Fischer & Turner, 1970) from which the short form is derived (Fischer & Farina, 1995). Previous research using the ATSPPH-SF has found that the measure has adequate internal consistency (Fischer & Farina, 1995; Elhai, Schweinle, & Anderson, 2008) and good test-retest reliability over a 4-week interval (Fischer & Farina, 1995). The criterion validity of the ATSPPH-SF is also empirically supported, as research has found that recent consumers of mental health care services demonstrate more positive attitudes towards seeking professional help (as measured by the scale) than non-consumers (Elhai et al., 2008). In the present study, Cronbach’s alpha for the total score was 0.78, indicative of adequate internal consistency. In terms of validity, ATSPPH total scores were significantly negatively associated with Barriers to Adolescents Seeking Help Scale ( $r = -.53, p < .01$ ).

***Barriers to Adolescents Seeking Help Scale – Brief Version (BASH-B;*** Wilson, Deane, Ciarrochi, & Rickwood, 2005). The BASH-B is an 11-item self-report measure derived from the original 37-item questionnaire developed by Kuhl, Jarkon-Horlick, & Morrissey (1997). The BASH-B measures barriers to seeking psychological help, and includes items such as “No matter what I do, it will not change the problems I have”. Items are rated on a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher scores indicating the perception of greater barriers to seeking professional

psychological help. Although originally developed for use with adolescents, previous research has used the measure in samples including both adolescents and individuals in emerging adulthood (e.g., university students; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Wilson & Deane, 2012). Previous research has found that the BASH-B demonstrates good validity and reliability, with Cronbach alpha coefficients of .83 (Wilson et al., 2005) and .84 (Wilson & Deane, 2012). In the present study, Cronbach's alpha for was 0.81, indicative of good internal consistency.

*Help seeking for disordered eating survey.* The help seeking for disordered eating survey used in the present study was adapted from the mental health literacy survey developed by Mond et al. (2010), which was initially modelled on the work of Jorm et al. (1997). In the study conducted by Mond et al., the survey began with a vignette depicting a fictional character (Naomi) exhibiting attitudes and behaviours consistent with disordered eating. Following the presentation of the vignette, participants were asked a variety of questions about the character's behaviour and the possibility of seeking help for her behaviour. In the development of their vignette, Mond and colleagues ensured that core features of disordered eating were present while avoiding the use of medical terminology.

In contrast to the work by Mond et al., the present study used two vignettes – one based on the disordered eating of a fictional character (“other” vignette, as in Mond et al., 2010), and another based on the (hypothetical) disordered eating of the participant herself (“self” vignette). The written content of the other vignette (depicting a fictional character, Lauren) used in the present study was slightly modified from the Naomi vignette developed by Mond et al (2010). As the Naomi vignette was originally developed for use

in Australian samples (prior to the year 2010), changes were made to enhance the applicability of the vignette to young women in contemporary North American culture (i.e., the sample of the present study). Specific changes to the written content include: change of the character's name from Naomi (Mond et al., 2010) to Lauren; conversion of weight values from kilograms (Mond et al., 2010) to pounds; changes to "healthy foods" from "fruit and vegetables and bread or rice" in Mond et al. (2010, p. 285) to "fruit, vegetables, and nuts"; and lastly change of "water tablets" (Mond et al., 2010, p. 285) to "laxatives" as the character's form of compensatory behaviour. The written content of the self vignette is identical to that of the other vignette, apart from necessary changes in wording to allow participant herself to be the main character of the vignette (as opposed to the fictional character, Lauren). In both the self and other versions of the vignette, the age, academic year, and academic major of the main character (i.e., Lauren or the participant herself) were matched to that of the participant completing the vignette.

Consistent with previous research, following the presentation of either vignette (i.e., self or other version), participants were asked to answer a variety of questions regarding the main character's behaviour and possible help seeking behaviours (see Appendix B for self vignette, and Appendix C for other vignette). For the first question, "What would you say is [character's] main problem?" participants were required to select only one answer from several options (adapted from Mond et al., 2010) that were listed in a predetermined and random order: "low self-esteem", "Anorexia Nervosa", "Bulimia Nervosa", "an eating disorder, but not Anorexia Nervosa or Bulimia Nervosa", "yo-yo dieting", "an anxiety disorder or problem", "stress", and "a general mental health problem". Participants were also provided with the options of "[character] doesn't have a

problem” (suggesting a belief that the character’s behaviour is not pathological), and “other (please specify)”. To assess help seeking beliefs, participants were then asked “Do you think [character] should seek help for [her/your] behaviour?” Participants were required to select only one response from a Likert-type scale ranging from 1 (*definitely not*) to 5 (*definitely*). To assess preferences for seeking help, participants were asked to indicate which interventions (if any) they believed might be helpful for the character. Under the heading “people who might be helpful for [character]”, various possible answers (adapted from Cometto 2014, and Mond et al., 2010) were listed, with participants asked to select all options (people) that they thought may be helpful. These options (listed in a predetermined and random order) included: “a family member”, “a close friend”, “an instructor”, “a spiritual advisor”, “a support group”, “a mental health professional (psychologist, psychiatrist, or social worker)”, “a general practitioner (family doctor)”, “a dietician or nutritionist”, “none of the above – [character] doesn’t need help”, and “other (please specify)”. Under the heading “activities which might be helpful for [character]”, various possible answers (adapted from Mond et al., 2010) were listed, with participants asked to select all options (activities) that they thought may be helpful for the character. These options (listed in a predetermined and random order) included: “individual therapy”, “admission to a hospital”, “exercise”, “trying to deal with the problem on [character’s] own”, “talking with a friend”, “talking with a parent”, “attending a support group”, “group therapy”, “learning about the problem/ available services”, “looking for information on the internet”, “joining an internet chat room”, “taking prescription medication”, “taking vitamins and minerals”, “none of the above – [character] doesn’t need help”, and “other (please specify)”. To assess perceived severity

of the character's behaviour, participants were asked, "How serious do you feel [character's] problem is?" (adapted from Cometto, 2014 and Mond et al., 2010).

Participants were asked to select only one response from a Likert-type scale ranging from 1 (*not serious at all – [character] doesn't have a problem*) to 4 (*very serious*). To assess perceptions of the character's ability to cope with her problem alone (without seeking help; adapted from Raviv et al., 2009), participants were asked "Do you think that [character] is able to cope with her problem alone, without seeking any help?"

Participants were also asked to select only one response from a Likert-type scale ranging from 1 (*definitely not*) to 5 (*definitely*). To assess perceived barriers to seeking help for disordered eating, participants were asked "If you think [character] should get help, what are some factors that might prevent her from getting help?" Participants were provided with the following options (adapted from Cometto, 2014 and presented in a predetermined and random order) and asked to select all answers that applied:

"[character] might be too busy", "waiting times are too long", "the help will be inadequate", "services are too expensive", "services are not available", "[character] might not know where to go", "[character] doesn't trust professionals", "there might be a language barrier", "transportation problems", "other people might find out", "[character] thinks [she/you] can handle it on her own", "people will think she is crazy or unstable", "[character] knows very little about mental health (e.g., signs of eating problems)", "none of the above – [character] doesn't need help", and "other (please specify)". Finally, to assess participants' perceptions of their own disordered eating attitudes and behaviours (as in Mond et al., 2010), participants were asked, "Do you think you might currently have a problem such as the one described (i.e., a problem with your eating and food-

related behaviours)?” Participants were asked to select only one response from a Likert-type scale ranging from 1 (*definitely not*) to 5 (*definitely*). In the present study, Cronbach’s alpha for the help seeking for disordered eating survey was 0.79, indicative of adequate internal consistency.

**Validity check.** To assess the validity of participants’ responses, the EDE-Q, the BCQ, and the ATSPPH-SF each had an additional item that asked participants to select a specific response. Each validity check item was adapted to fit the Likert-type scale of the questionnaire it was added to in order to appear consistent with other scale items. The item added to the EDE-Q read, “If you are reading this, please select ‘everyday’”. The item added to the BCQ read, “If you are reading this, please select ‘never’”. The item added to ATSPPH-SF read, “If you are reading this, please select ‘disagree’”.

## **Procedure**

The present study was advertised online via the University of Windsor participant pool website. Disordered eating attitudes and behaviours were not mentioned in the advertisement in order to reduce the likelihood of self-selection bias. Participants were offered course credit for completing the study. The study was administered online using FluidSurveys. Upon accessing the online study, participants were presented with an informed consent form. Following the indication of consent, participants were asked to enter their age in format “XX” where X represents a numeral between 0 and 9. Participants were then asked to indicate their academic major (e.g., Psychology), or to select “unspecified”. The participant’s age and academic major were collected for demographic data purposes and for use in the vignette (i.e., “[You/Lauren] is a [age]-year-old undergraduate [major] student”). If the participant chose “unspecified” for their

major, or elected not to disclose their age, this information was not included in the vignette (i.e., “[You/Lauren] is/are an undergraduate student”).

Following the provision of this information, participants were randomly assigned to either the “self” or “other” condition. Participants assigned to the self condition received the version of the vignette based on the hypothetical disordered eating of the participant herself (e.g., “You are a 20-year-old undergraduate Forensic Science student. Although you were mildly overweight as an adolescent, your current weight is within the normal range for your age and height”). Participants assigned to the other condition received the version of the vignette based on the disordered eating of a fictional character, Lauren (e.g., “Lauren is a 20-year-old undergraduate Forensic Science student. Although she was mildly overweight as an adolescent, her current weight is within the normal range for her age and height”). The vignette remained on the screen for a minimum of 60 seconds; after 60 seconds had elapsed, participants were able to click “Next” to begin the questions based on the vignette. Participants were then asked to complete the eight corresponding questions based on the fictional vignette that they read about Lauren or themselves. While completing the questions, participants were able return to and re-read the vignette at any time. As in Mond et al. (2010), the survey ended with a question addressing participants’ own eating behaviors. Throughout the completion of this part of the study, the following variables were recorded: the number of times each participant visited the vignette page, the amount of time spent reading the vignette each time the page was visited, and the amount of time spent completing the corresponding questions. Following the completion of the help seeking for disordered eating survey, participants were asked to complete a demographics questionnaire. After the demographics questionnaire, the

following measures were delivered to participants in a randomized order: EDE-Q, EAT-26, BCQ, ATSPPH-SF, and the BASH-B. When each of these measures were completed, participants were directed to a webpage with a letter of information that explained the purpose of the study and listed community services for disordered eating and general mental health issues.



## CHAPTER 3

### Results

#### Approach to Data Analysis

Data were screened for evidence of invalid responding, and participants who were suspected to have provided invalid data ( $n = 6$ ) were removed from the data set.

Following this, a missing values analysis was performed on all variables included in the present study. Composite scores for the Eating Disorder Examination-Questionnaire (EDE-Q), Body Checking Questionnaire (BCQ), Eating Attitudes Test (EAT-26), Attitudes Towards Seeking Professional Psychological Help – Short Form (ATSPPH), and Barriers to Adolescent Seeking Help – Brief Version (BASH-B) were calculated. For the self-other questionnaire, the sum totals of number of barriers endorsed, people identified as being helpful for the character, and activities identified as being helpful for the character were calculated. Assumptions of parametric (i.e., multiple regression analysis [MRA], multinomial logistic regression, independent samples  $t$ -tests, correlations) and non-parametric (Chi Square) were assessed and corrected for (if violated). Correlations between all study variables and pertinent demographic variables (e.g., body mass index [BMI], current and past use of mental health services) were examined. Due to the categorical nature of both the independent and dependent variables, research questions and hypotheses were analysed using the following procedures: Pearson correlations, Chi Square test, multiple regression analysis (MRA), multinomial logistic regression, logistic regression, and independent samples  $t$ -tests. For MRAs, predictor variables involved in interaction terms were centred to avoid multicollinearity (Cohen, Cohen, West, & Aiken, 2003). MRA analyses were also

bootstrapped, with 1000 resamples specified. Bootstrapped results are reported throughout the document and in corresponding tables due to questions about the assumption of normality. That said, non-bootstrapped results did not differ from bootstrapped results for any of the MRAs.

### **Preliminary Analyses**

**Invalid responding.** Following the completion of data collection, responses to the validity check items added to the EDE-Q, the BCQ, and the ATSPPH were examined for evidence of invalid responding. Upon examination of the data, four participants were identified as having failed (i.e., incorrectly answered) more than one validity check item, and as a result were excluded from the final data set. Two more participants were identified as having completed the survey more than once; for these participants, only the data from their first completion of the survey was retained. Following the exclusion of these participants ( $n = 6$ ), the data from 198 participants remained in the data set.

**Missing data.** A missing values analysis was conducted to determine proportion of missing data across all variables involved in the main analyses of the study. The percentage of missing values for each variable ranged from 0 to 6.6%. With the exception of weight (6.6% missing) and height (2.0% missing), the percentage of missing values for remaining variables ranged from 0 to 0.5%. The overall percentage of missing values was 0.14%. Little's MCAR test was not significant,  $\chi^2(1024) = 174.43, p = 1.00$ , indicating the data were missing completely at random. Multiple imputation, considered to be the most reliable form of data replacement (Cohen et al., 2003), was used to estimate missing values for weight and height variables. Estimations of missing values were averaged

across five imputations, and the resulting values were used to calculate Body Mass Index (BMI).

**Effectiveness of random assignment.** A series of independent samples *t*-tests were conducted to assess whether random assignment of participants to the self and other conditions was effective. Results of the *t*-tests suggest that participants assigned to the self condition versus the other condition did not significantly differ in terms of demographic characteristics including age, weight, height, and past or current professional help-seeking (all *ps* > .05). Participants assigned to self versus other conditions also did not significantly differ on composite and subscale scores of the EDE-Q, BCQ, EAT-26, ATSPPH, and BASH-B (all *ps* > .05), nor on pertinent demographic variables (namely, body mass index [BMI]). Based on these results, it is assumed that random assignment to the study conditions was effective. For a summary of the independent samples *t*-tests conducted to determine whether random assignment was effective, see Table 1.

**Assumptions of parametric tests.** Prior to conducting the main analyses of the study, assumptions of the parametric tests (i.e., independent samples *t*-tests, correlations, MRA, and multinomial logistic regression) used to analyse the data were assessed. Relevant assumptions were tested for the composite scores of the EDE-Q, BCQ, ATSPPH, and BASH-B; for the responses to the Seek Help, Severity, Cope Alone, and Recognition items of the vignette questionnaire; and for the number of choices endorsed on the Helpful People, Helpful Activities, and Barriers items of the vignette questionnaire. Assumptions are listed in the order of which they were assessed. For a summary of vignette questionnaire items, see Table 2.

Table 1.  
*Effectiveness of Random Assignment, N = 198*

Variable	<i>Self condition</i> ( <i>n</i> = 98)		<i>Other condition</i> ( <i>n</i> = 100)		<i>t</i> -statistic
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
BMI	24.15	6.00	24.02	5.35	0.17
EDE-Q	1.77	1.27	1.98	1.53	-1.64
Restraint	1.10	1.24	1.42	1.47	-1.42
Eating Concern	0.94	1.10	1.20	1.45	-0.51
Shape Concern	2.64	1.68	2.77	1.91	-0.48
Weight Concern	2.42	1.68	2.54	1.89	-1.31
EAT-26	6.80	5.99	8.83	8.88	-1.89
Diet	4.96	4.39	5.00	5.70	-1.30
BN and Food Preoccupation	1.17	2.21	1.73	2.96	-1.50
Oral Control	4.06	4.39	5.00	5.07	-1.76
BCQ	50.84	18.53	54.07	19.35	-1.20
Appearance	24.31	7.46	26.31	8.51	-1.75
Body Parts	17.77	8.60	19.05	8.41	-1.05
Idiosyncratic Checking	8.74	3.62	8.71	3.74	0.06
ATSPPH	18.18	6.00	18.61	5.58	-0.51
BASH-B	3.08	0.83	2.94	0.93	1.11

*Note.* BMI = Body mass index; EDE-Q = Eating Disorder Examination-Questionnaire; Restraint, Eating Concern, Shape Concern, and Weight Concern = subscales of the EDE-Q; EAT-26 = Eating Attitudes Test; Diet, Bulimia Nervosa and Food Preoccupation, Oral Control = subscales of the EAT-26; BCQ = Body Checking Questionnaire; Appearance, Body Parts, and Idiosyncratic Checking = subscales of the BCQ; ATSPPH = Attitudes Towards Seeking Professional Psychological Help - Short Form; BASH-B = Barriers to Adolescents Seeking Help Scale - Brief Version.

\**p* < .05, \*\* *p* < .001.

Table 2.  
*Self and Other Vignette Questionnaire Items and Item Labels*

Item Label	Item
Recognition-Character	What would you say is [your/Lauren's] main problem? ( <i>Select one</i> )
Seek Help	Do you think [you/Lauren] should seek help for [your/her] behaviour? ( <i>Select one</i> )
Helpful People	Please indicate which persons (if any) you believe might be helpful for [you/Lauren]. ( <i>Select all that apply</i> )
Helpful Activities	Please indicate which activities (if any) you believe might be helpful for you/Lauren. ( <i>Select all that apply</i> )
Barriers	If you think [you/Lauren] should get help, what are some factors that might prevent [you/her] from getting help? ( <i>Select all that apply</i> )
Severity	How serious do you feel [your/Lauren's] problem is? ( <i>Select one</i> )
Cope Alone	Do you think that [you/Lauren] are able to cope with [your/her] problem alone, without seeking any help? ( <i>Select one</i> )
Recognition-Self	Do you think you might currently have a problem such as the one described (i.e., a problem with your eating and food related behaviours)? ( <i>Select one</i> )

*Note.* [Your] and [you] correspond to items seen by participants in the self condition, whereas [her] and [Lauren] correspond to items seen by participants in the other condition.

***Correct specification of the model.*** The assumption of correct specification of the model is considered prior to the collection of data, and requires that predictor variables identified by theory and previous research are included in the MRA (Cohen et al., 2003). Although the present area of research is largely unexplored, variables of interest were identified on a theoretical and empirical basis. Upon examination of the data, it was apparent that specific demographic variables (i.e., past use of mental health services [MHS-Past], current use of mental health services [MHS-Current], and BMI) and study variables (BASH-B, ATSPPH) correlated with the predictor and outcome variables of certain regression models. To uphold the assumption of correct specification, these variables were therefore included as predictors in the specific MRAs.

***Normality.*** The assumption of univariate normality requires that data are normally distributed at each level of the independent variable. Although univariate normality of the outcome variables is not an explicit assumption of MRA and multinomial logistic regression (see “Normality of residuals” subsection), it has been suggested that non-normal distribution of variables in a regression analysis can influence the solution of a regression model (Tabachnick & Fidell, 2007). Univariate normality was therefore assessed using the Shapiro Wilk’s test, visual inspection of histograms and Q-Q plots, and analysis of corresponding skewness and kurtosis values. With the exception of composite scores for ATSPPH ( $SW(98) = .09, p = .115$ ) and BASH-B ( $SW(98) = .06, p = .070$ ) for the self condition, Shapiro-Wilk’s tests were significant (all  $ps < .05$ ) for both the self and other conditions across all study variables. Although commonly used, the reliability of the Shapiro-Wilk’s statistic in determining whether a distribution deviates from normality is questionable – in large samples, the test is likely to be significant even

for small deviations from normality (Field, 2009). When examining histograms and Q-Q plots of the variables, it was noted that (for both self and other conditions) the histogram distributions of the Seek Help and Severity variables appeared moderately negatively skewed, and the distribution of Recognition-Self appeared moderately positively skewed. Upon inspection of skewness and kurtosis values, however, skewness was in the acceptable range of  $\pm 2$  for all variables, and kurtosis was only outside of the acceptable range of  $\pm 3$  for the Seek Help item in both the self condition (kurtosis = 3.5) and the other condition (kurtosis = 3.4). Although skewness values of  $\pm 3$  are thought to represent a severe degree of skewness (Kline, 2011), there is less consensus regarding the cut-off for kurtosis; Kline (2011) suggests that kurtosis values are problematic when exceeding  $\pm 10$ . All things considered, the deviation from normality in the present data did not appear to be severe enough to warrant transformation of the variables. Furthermore, both independent samples *t*-tests and MRA are thought to be robust to violations of normality (Cohen et al., 2003).

***Homogeneity of variance.*** The homogeneity of variance assumption requires that variances across experimental groups (self and other conditions) are approximately equivalent to one another. For the current analyses, homogeneity of variance was assessed for variables involved in independent *t*-test analyses (i.e., Seek Help, Severity, Cope Alone, Helpful People, Helpful Activities, and Barriers). Results of Levene's Test of Equality of Variances were found to be nonsignificant (all *ps* > .05) for the Helpful People, Helpful Activities, and Barriers variables, suggesting homogeneity of variance across conditions for these variables. By contrast, for Seek Help, Severity, and Cope Alone, Levene's statistics were significant (all *ps* < .05), indicating that, for these

variables, variances were not homogenous. It should be noted, however, that Levene's statistic is sensitive to normality, and so the violation of normality for these variables may have influenced these results. To determine the extent of the potential violation, between-group variances were examined within the Seek Help, Severity, and Cope Alone variables. When the violation of the assumption is not severe, the ratio of the largest group variance: smallest group variance should be less than 4:1. For all three variables, the ratio of the largest to smallest variance did not exceed 4:1, thus indicating that the violation of the assumption of homogeneity of variance was not severe.

**Outliers.** Variables were inspected for univariate and multivariate outliers, regardless of study condition (i.e., EDE-Q, BASH-B, ATSPHH, Recognition-Self, BMI) and at the level of each condition (i.e., Seek Help, Severity, Cope Alone, Helpful People, Helpful Activities, Barriers). To detect univariate outliers, data were converted to  $z$ -scores; scores that exceeded  $z = \pm 3.29$  were deemed to be outliers. To reduce the impact of these outlying data points and avoid data loss, each outlier was Winsorized – replaced with a raw score one unit less extreme than the present score (Tabachnick & Fidell, 2007). Two outliers were detected on Severity ( $z_s = -3.96$ ) and five on Seek Help ( $z = -5.17$  and  $z_s = -3.75$ ); all seven outliers were Winsorized.

Data were then examined for (a) multivariate outliers on the predictor variables of MRA analyses (i.e., BASH-B, EDE-Q, Seek Help, Severity, Cope Alone, Barriers, BMI, and interaction terms), (b) outliers on the outcome variables of MRA analyses (i.e., Identification, Seek Help, Severity, Cope Alone, ATSPPH, BASH-B, and interaction terms), and (c) influential observations; this process was repeated for each individual regression model. Following detection, outlying data points were removed from the data



set and regression analyses were re-run – if results were significantly impacted by the deletion, the outlier was excluded from the final data set; if results were not impacted, the outlier was included in the final data set. Multivariate outliers on predictor variables were detected using Mahalanobis distance values assessed on the  $\chi^2$  distribution ( $k = df, p = .001$ ). Outliers on the outcome variables of MRA analyses were detected using deleted studentized residual values evaluated on a  $t$  distribution ( $df = N - k - 1, p = .001$ ). Influential observations – cases with extreme scores on a predictor variable and on the outcome variable – were identified using Cook's Distance and Standardized DFFITs values (using cut-off values of one and two, respectively), which compare regression coefficients when the extreme case is included versus not included in the data set (Cohen et al., 2003).

Across all regression models, eight multivariate outliers on predictor variables were identified using Mahalanobis distance cut-off values (specific to each regression model). Upon exclusion from the data set, the results of the regressions did not change appreciably; as such, these cases were included in the final data set. Across all regression models, five outliers on outcome variables were identified using deleted studentized residuals according to a cut-off value based on the  $t$  distribution (specific to each regression model). Specifically, outliers were detected on Identification, Seek Help, and ATSPPH variables. Upon exclusion from the data set, results of the regression models were impacted – in all cases, regression statistics (i.e.,  $R$ ,  $R^2$ , and regression coefficient ( $B$ ) values) and significance levels changed appreciably. Accordingly, these cases ( $n = 5$ ) were excluded from the final data set. One influential observation was identified using Cook's distance and SDFITs values. As the results of the MRA were significantly

impacted by its exclusion, the influential observation was deleted from the data set. As a result of outlier analysis,  $n = 6$  cases were deleted from the final data set in total ( $N = 192$ ).

**Linearity.** To visually assess for assumption of linearity (i.e., linear relationships between predictor and outcome variables), scatter plots of residuals (i.e., the discrepancy between predicted and observed data points) were examined. Specifically, the scatterplots depicted the residuals on the y-axis and (a) the independent variables of the regression and (b) the predicted values for the independent variables on the x-axis. Across all regression models, superimposed LOWESS lines (indicating the general trend of the data) generally followed the zero-line without large deviations, suggesting linear relationships between predictors and outcome variables. Exceptions to this trend included the BASH-B and BMI variables, which showed some deviation from linearity. In general, MRA is considered to be robust to the assumption of linearity, given that a linear model has been correctly specified and that the departure from linearity isn't large (Cohen et al., 2003).

**Homoscedasticity.** Similar to the assessment of linearity, homoscedasticity – the assumption of constant variance of the residuals across values of the independent variable – was assessed by examining scatterplots of the residuals. In general, the scatterplots depicted a constant variance of residuals across values of the independent variables (i.e., there was an approximately equal distribution of residuals above and below the zero-line, and no evidence of curvilinear or megaphone patterns). An exception to this trend was BASH-B, which showed some indication of decreases in variance of residuals as

predictor values increased. MRA is considered to be robust to the violations of homoscedasticity if the degree of heteroscedasticity is not large (Cohen et al., 2003).

***Normality of residuals.*** The assumption of the normality of residuals (of the outcome variables) is assessed by visually analyzing residual scatter plots (as outlined above), histograms of the residuals, and q-q plots of the residuals. Visual analysis of histograms and q-q plots of residuals indicated that the distributions of residuals for ATSPPH and BASH-B approximated the normal distribution, whereas EDE-Q deviated somewhat from normality. Of the vignette variables, distributions of residuals for Recognition-Self and Seek Help approximated normality, whereas Severity and Cope Alone deviated from the normal distribution. Although MRA is generally robust to violations of normality, non-normality may be problematic in the context of deviations from linearity and/or homoscedasticity (Cohen et al., 2003). Violations of this kind can be dealt with by bootstrapping, which creates a sample by randomly drawing from the original data set (with replacement). Bootstrapping does not assume normality or homoscedasticity, and can also help with violations of linearity (Cohen et al., 2003; Tavakol & Wilcox, 2013). As such, it was determined that all MRAs would be bootstrapped (with 1000 resamples specified).

***Multicollinearity.*** Multicollinearity is the extent to which the predictor variables in the model are correlated with one another. When multicollinearity is high, the regression equation becomes unstable – the unique variance in the outcome accounted for by each individual predictor variable becomes difficult to estimate, and standard error increases (Cohen et al., 2003). In the present study, scores on the EDE-Q (a measure of eating pathology) were highly correlated with the BCQ (a measure of body checking,

associated with eating pathology;  $r = .81, p < .001$ ). To prevent a high level of multicollinearity in the regression models, BCQ was not included as a predictor variable for any of the MRAs. To assess for multicollinearity between remaining predictor variables, tolerance values – statistics based on the prediction of one independent variable from the other independent variables – were examined. In general, smaller tolerance values are indicative of higher levels of multicollinearity. In the present sample, tolerance values for all MRAs were greater than the cut-off value of .20, indicating that multicollinearity was absent. As an additional guard against multicollinearity, predictor variables involved in interaction terms were centered for all relevant MRAs (Field, 2009).

***Reliability.*** The assumption of reliability requires that there is no measurement error in the independent variables of the regression model. This assumption should be considered prior to the collection of data (i.e., by choosing only highly reliable measures), but can be assessed after data collection by calculating Cronbach's coefficient alpha (a measure of internal reliability that represents the mean of the correlations between all possible splits of the scale into two halves; Cohen et al., 2003). In the present sample, Cronbach's values ranged from .79 to .96.

***Independence of observations and residuals.*** The assumption of independence of observations was considered prior to data collection and is considered to be upheld. Data were not collected in groups (to the researcher's knowledge) nor at adjacent time points, and thus observations can be considered independent. The assumption of independence of residuals was assessed by examining scatterplots (with residual values on the  $y$ -axis and case number on the  $x$ -axis) for evidence of data clustering; no such clustering was found, and thus this assumption is also considered to be upheld.

## **Descriptive Analyses**

For descriptive statistics of self and other vignette questionnaire variables, see Table 3. For descriptive statistics of all other study variables (EDE-Q, BCQ, ATSPPH, and BASH), see Table 4. For correlations between study variables and pertinent demographic variables (BMI, MHS-current, and MHS-past), see Table 5.

Table 3. *Descriptive Statistics for the Vignette Questionnaires (Self and Other), N = 192*

Item	Self condition ( <i>n</i> = 95)				Other condition ( <i>n</i> = 97)			
	<i>M</i>	<i>SD</i>	<i>Max.</i>	<i>Min.</i>	<i>M</i>	<i>SD</i>	<i>Max.</i>	<i>Min.</i>
Seek Help	4.49	0.87	5	1	4.82	0.38	5	4
Seek Help <sub>w</sub>	4.55	0.70	5	3	4.82	0.38	5	4
Helpful People	3.69	2.26	8	0	4.38	2.28	8	1
Helpful Activities	4.73	2.57	12	0	4.58	2.28	9	1
Barriers	4.32	2.78	13	0	5.47	2.83	13	1
Severity	3.44	0.71	4	1	3.62	0.53	4	2
Severity <sub>w</sub>	3.46	0.65	4	2	3.62	0.53	4	2
Cope Alone	2.26	1.08	5	1	1.92	0.72	4	1
Recognition-Self	2.08	1.16	5	1	2.15	1.29	5	1

*Note.* Seek Help<sub>w</sub> = Seek Help variable with univariate outliers Winsorized (used in final analyses); Severity<sub>w</sub> = Severity variable with univariate outliers Winsorized (used in final analyses).

Table 4.  
*Descriptive Statistics for Study Variables, N = 192*

Variable	<i>M</i>	<i>SD</i>	<i>Max.</i>	<i>Min.</i>
BMI	24.16	5.72	53.12	11.46
EDE-Q	1.90	1.42	5.80	0.00
BCQ	52.62	18.96	106.00	23.00
ATSPPH	18.47	5.76	30.00	3.00
BASH	3.02	0.89	5.82	1.36

*Note.* BMI = Body mass index; EDE-Q = Eating Disorder Examination-Questionnaire; BCQ = Body Checking Questionnaire; ATSPPH = Attitudes Towards Seeking Professional Psychological Help - Short Form; BASH-B = Barriers to Adolescents Seeking Help Scale - Brief Version.

Table 5.  
*Correlations Between Study Variables and Pertinent Demographic Variables, N = 192*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Study condition	-	.23*	.13	-.19**	.03	.08	.09	.04	-.08	.06	.03	-.01
2. Seek Help	-	-	.67**	-.51**	.02	.08	.12	.26**	-.14*	.18*	.11	.15*
3. Severity	-	-	-	-.50**	-.06	.10	.14	.24**	-.08	.08	.10	.10
4. Cope Alone	-	-	-	-	.08	-.00	.01	-.22**	.13	-.02	.01	-.01
5. Recognition-Self	-	-	-	-	-	.64**	.54**	.08	.22**	.13	.22**	.25**
6. EDE-Q	-	-	-	-	-	-	.81**	.12	.23**	.22**	.31**	.50**
7. BCQ	-	-	-	-	-	-	-	.04	.28**	.15*	.24**	.32**
8. ATSPPH	-	-	-	-	-	-	-	-	-.55**	.30**	.27**	.22**
9. BASH-B	-	-	-	-	-	-	-	-	-	-.23**	-.06	-.05
10. MHS-Current	-	-	-	-	-	-	-	-	-	-	.48**	.05
11. MHS-Past	-	-	-	-	-	-	-	-	-	-	-	.24**
12. BMI	-	-	-	-	-	-	-	-	-	-	-	-

*Note.* Study condition = self condition [0], other condition [1]; EDE-Q = Eating Disorder Examination-Questionnaire; BCQ = Body Checking Questionnaire; ATSPPH = Attitudes Towards Seeking Professional Psychological Help - Short Form; BASH-B = Barriers to Adolescents Seeking Help Scale - Brief Version; MHS-Current = Current use of mental health services; MHS-past = Past use of mental health services; BMI = Body mass index.

\* $p < .05$ , \*\*  $p < .001$ .



## Main Analyses

**Effect of eating pathology.** The following analyses pertain to research question 1 through research question 4, which examine the influence of participants' own degree of eating pathology on: recognition of their own pathology (1a) and the vignette character's pathology (1b); perceptions of the vignette character's behaviour (2a – 3c); and general beliefs about seeking help for mental health issues (4a – b). Where applicable, interactions with the study condition (i.e., whether participants read a hypothetical vignette about themselves [self condition] or read a vignette about Lauren [other condition]) were explored.

The question of whether participants' own degree of eating pathology (operationalized as global score on the EDE-Q) influenced recognition of their disordered eating (operationalized as response to the Recognition-Self item; 1a) was analysed using MRA. In addition to the planned predictor of EDE-Q score, participants' past use of mental health services (MHS-past), body mass index (BMI), and perceived barriers to seeking psychological help (BASH-B) were significantly correlated with both EDE-Q and Recognition-Self, and thus were included in the regression model as predictors. The linear multiple regression analysis was significant ( $R^2 = .43$ , *adjusted*  $R^2 = .42$ ,  $F(4, 187) = 35.40$ ,  $p < .001$ ); thus, the set of predictors – eating pathology (EDE-Q), past use of mental health services (MHS-past), BMI, and perceived barriers to seeking psychological help (BASH-B) – together account for 42.0% of the variance in participants' recognition of their own degree of eating pathology (Recognition-Self). In the presence of all other terms included in the model, only eating pathology as measured by the EDE-Q emerged as a significant predictor of participants' recognition of their own eating pathology.

Specifically, for every one-unit increase in participants' EDE-Q score, there was a corresponding .57-unit increase in recognition of their eating pathology ( $B = 0.57$ ,  $SE = 0.07$ ,  $p = .001$ , 95% CI [0.44, 0.70]). For a summary of the MRA predicting Recognition-Self, see Table 6.

Table 6.  
*Multiple Regression Analysis Predicting Recognition-Self, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	1.13	0.43	.012	0.20	1.93
BASH-B	0.10	0.08	.223	-0.06	0.26
EDE-Q	0.57	0.07	.001	0.44	0.70
MHS-Past	0.11	0.16	.504	-0.20	0.42
BMI	-0.02	0.01	.207	-0.04	0.02

*Note.* BASH-B = Barriers to Adolescents Seeking Help Scale - Brief Version; EDE-Q = Eating Disorder Examination-Questionnaire; BMI = Body mass index; MHS-Past = Past use of mental health services.  $R^2 = .43, p < .001$ .

The question of whether participants' own degree of eating pathology (EDE-Q) influenced their recognition of the vignette character's disordered eating (Recognition – Character; 1b) was assessed using multinomial logistic regression. Although discriminant analysis – a statistical analysis used to classify individuals into groups on the basis of a quantitative variable – represents a more powerful technique, its assumptions are restrictive (i.e., multivariate normality at each level of the dependent variable; equivalent variances, covariances and sample size at each level of the dependent variable; Green & Salkind, 2008) and were unlikely to be met in the present sample. Thus, multinomial logistic regression was chosen as an alternative, as it was thought more likely to produce valid results. For the multinomial logistic regression, the independent variable was operationalized as scores on the EDE-Q, and the dependent variable as responses to the Recognition-Character item. Recognition-Character answer categories were collapsed according to guidelines explained for research question 5 (see “Effect of study condition” subsection of results), resulting in eight possible response categories: low self-esteem; Bulimia Nervosa (BN); Anorexia Nervosa (AN); an eating disorder, but not AN or BN; yo-yo dieting; other mental health problem; no problem; and prefer not to say. The multinomial logistic regression was not significant, Pearson  $\chi^2(6, N = 192) = 10.63, p = .100$ ; thus, participants EDE-Q scores did not predict significant variance in participants' response to the Recognition-Character item. For a summary of the multinomial logistic regression predicting Recognition-Character, see Table 7.

Table 7.  
*Multinomial Logistic Regression Predicting Recognition-Character, N = 192*

Recognition- Character Category	<i>B</i>	<i>SE B</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp. B</i>	95% CI ( <i>Exp. B</i> )	
						<i>Lower</i>	<i>Upper</i>
Low self esteem	1.88	1.28	2.16	.14	6.58	0.53	81.15
AN	1.780	1.30	1.92	.17	6.02	0.48	76.40
BN	1.89	1.28	2.19	.14	6.65	0.54	81.77
Eating disorder, but not AN or BN	2.14	1.29	2.76	.10	8.49	0.68	105.91
Yo-yo dieting	1.81	1.30	1.94	.16	6.13	0.48	78.63
Other mental health problem	2.14	1.29	2.77	.10	8.50	0.68	105.73

*Note.* Reference category = “[I don’t]/ [She doesn’t] have a problem”. Pearson  $\chi^2(6, N = 192) = 10.63, p = .100$ .

The question of whether participants' own degree of eating pathology (EDE-Q) influenced their beliefs regarding whether the vignette character should seek help (responses to the Seek Help item; 2a) was analysed using MRA. In addition to the planned predictor of EDE-Q score, participants' current use of mental health services (MHS-current) and body mass index (BMI) were significantly correlated with both EDE-Q and Seek Help, and accordingly were included in the regression model as predictors. To assess the effect of the study condition (self versus other), and to explore the potential interaction between study condition and participants' eating pathology, an interaction term – EDE-Q<sub>c</sub> x condition – was computed and also included as a predictor in the model. The linear multiple regression analysis was significant ( $R^2 = .11$ , *adjusted R*<sup>2</sup> = .08,  $F(5, 186) = 4.46$ ,  $p = .001$ ); thus, the set of predictors – eating pathology (EDE-Q), current use of mental health services (MHS-current), BMI, study condition, and the interaction between eating pathology and study condition (EDE-Q<sub>c</sub> x condition) – together account for 8.3% of the variance in participants' beliefs regarding whether the vignette character should seek help (Seek Help). In the presence of all other terms included in the model, study condition, current use of counselling services, and BMI emerged as significant predictors of responses to the Seek Help item. Specifically, participants who read the vignette about Lauren (as opposed to the hypothetical vignette about themselves) more strongly believed that the character should seek help ( $B = 0.26$ ,  $SE = 0.08$ ,  $p = .003$ , 95% CI [0.12, 0.41]). Participants who were (at the time of data collection) receiving mental health services (as opposed to those who were not) more strongly believed that the character should seek help ( $B = 0.29$ ,  $SE = 0.07$ ,  $p = .002$ , 95% CI [0.14, 0.43]). Finally, with every one-unit increase in participants' BMI, there was a corresponding 0.02-unit

increase in the belief that the vignette character should seek help ( $B = 0.02$ ,  $SE = 0.01$ ,  $p = .017$ , 95% CI [0.004, 0.03]). For a summary of the MRA predicting Seek Help, see Table 8.

Table 8.  
*Multiple Regression Analysis Predicting Seek Help, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	4.11	0.21	.001	3.69	4.49
EDE-Q <sub>c</sub>	-0.00	0.06	.967	-0.14	0.11
Condition	0.26	0.08	.003	0.12	0.41
MHS-Current	0.29	0.07	.002	0.14	0.43
BMI	0.02	0.01	.016	0.004	0.03
EDE-Q <sub>c</sub> x Condition	-0.04	0.07	.541	-0.16	0.09

*Note.* EDE-Q = Eating Disorder Examination-Questionnaire; Condition = Self [0], Other [1]; MHS-Current = Current use of mental health services; BMI = Body mass index; EDE-Q<sub>c</sub> x Condition = Eating Disorder Examination-Questionnaire (centred) x study condition.  $R^2 = .11$ ,  $p = .001$ .



The question of whether participants' own eating pathology influenced the number of people and activities (Helpful People, Helpful Activities; 2b) perceived to be helpful for the vignette character was analysed using Pearson correlations. Participants' eating pathology (EDE-Q) was not significantly associated with the number of people ( $r = .07, p = .336$ ) nor the number of activities ( $r = .05, p = .507$ ) endorsed as potentially being helpful to the character. The question of whether participants' eating pathology influenced the number of factors that might prevent the vignette character from seeking help (Barriers; 2b) was also analysed using a Pearson correlation; this association was not significant ( $r = .12, p = .085$ ).

The questions of whether participants' eating pathology influenced perceptions of the severity of the vignette characters' problem (Severity; 3a) and perceptions of the vignette character's ability to cope with the problem alone (Cope Alone; 3b) were analysed using separate MRAs. For both research questions, to assess the effect of the study condition (self versus other), and to explore the potential interaction between study condition and participants' eating pathology (centred), both study condition and the interaction term (EDE- $Q_c$  x condition) were included as predictors in the models. For research question 3a, the linear multiple regression analysis was significant ( $R^2 = .04$ , *adjusted*  $R^2 = .03$ ,  $F(3, 188) = 2.74, p = .045$ ); thus, the set of predictors – eating pathology (EDE-Q), study condition, and the interaction between eating pathology and study condition (EDE- $Q_c$  x condition) – together account for 3.0% of the variance in perceptions of severity of the vignette character's problem. None of the terms included in the regression model emerged as significant predictors of Severity, however. For research question 3b, the linear multiple regression analysis was not significant ( $R^2 = .04$ ,

*adjusted R*<sup>2</sup> = .02, *F*(3, 188) = 2.55, *p* = .057); thus, together the predictors did not significantly account for variance in the outcome. Despite this, study condition emerged as a significant predictor of variance in responses to the Cope Alone item; specifically, participants who read the (hypothetical) vignette about themselves (as opposed to the vignette about Lauren), more strongly believed that the character was able to cope with the problem alone, without seeking any help (*B* = -0.35, *SE* = 0.13, *p* = .011, 95% CI [-0.61, -0.09]). For a summary of the MRA predicting Severity, see Table 9. For a summary of the MRA predicting Cope Alone, see Table 10.

Table 9.  
*Multiple Regression Analysis Predicting Severity, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	3.45	0.07	.001	3.32	3.58
EDE-Q <sub>c</sub>	0.11	0.06	.087	-0.01	0.22
Condition	0.16	0.09	.054	0.00	0.34
EDE-Q <sub>c</sub> x Condition	-0.10	0.07	.176	-0.24	0.05

*Note.* EDE-Q = Eating Disorder Examination-Questionnaire; Condition = Self [0], Other [1]; EDE-Q<sub>c</sub> x Condition = Eating Disorder Examination-Questionnaire (centred) x study condition.  $R^2 = .04$ ,  $p = .045$ .

Table 10.  
*Multiple Regression Analysis Predicting Cope Alone, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	2.26	0.10	.001	2.05	2.46
EDE-Q <sub>c</sub>	-0.05	0.10	.648	-0.23	0.14
Condition	-0.35	0.13	.011	-0.61	-0.09
EDE-Q <sub>c</sub> x Condition	0.09	0.11	.438	-0.24	0.31

*Note.* EDE-Q = Eating Disorder Examination-Questionnaire; Condition = Self [0], Other [1]; EDE-Q<sub>c</sub> x Condition = Eating Disorder Examination-Questionnaire (centred) x study condition.  $R^2 = .04$ ,  $p = .057$ .

Finally, the questions of whether participants' eating pathology were associated with their general attitudes towards help seeking for psychological issues (ATSPPH; 4a) and general perceptions of barriers toward help seeking for psychological issues (BASH-B; 4b) were analysed using separate MRAs. For research question 4a, in addition to the planned predictor of EDE-Q score, participants' past and current use of mental health services (MHS-past, MHS-current), body mass index (BMI), and perceived barriers to seeking psychological help (BASH-B) were significantly correlated with both EDE-Q and ATSPPH, and accordingly were included in the regression model as predictors. The linear multiple regression analysis was significant ( $R^2 = .40$ , *adjusted*  $R^2 = .38$ ,  $F(5, 184) = 24.16$ ,  $p < .001$ ); thus, the set of predictors – eating pathology (EDE-Q), current and past use of mental health services (MHS-current; MHS past), BMI, and perceived barriers towards seeking psychological help (BASH-B)– together account for 38% of the variance in participants' general attitudes towards seeking psychological help (ATSPPH). In the presence of all other terms included in the model, EDE-Q, BASH-B, and MHS-past emerged as significant predictors of ATSPPH. With every one-unit increase in participants' eating pathology, there was a corresponding 0.66-unit increase in attitudes towards seeking professional psychological help ( $B = 0.66$ ,  $SE = 0.27$ ,  $p = .014$ , 95% CI [0.14, 1.21]). Participants who had received mental health services in the past (relative to those who had not) had more positive attitudes towards seeking professional psychological help ( $B = 1.74$ ,  $SE = 0.75$ ,  $p = .018$ , 95% CI [0.29, 3.20]). Finally, with every one-unit increase in participants' general perceptions of barriers, there was a -3.61-unit decrease in their attitudes towards seeking professional psychological help ( $B = -3.61$ ,  $SE = 0.38$ ,  $p = .001$ , 95% CI [-4.34, -2.84]).

For research question 4b, in addition to the planned predictor of EDE-Q score, participants' current use of mental health services (MHS-current) was significantly correlated with both EDE-Q and BASH-B, and accordingly was included in the regression model as a predictor. The linear multiple regression analysis was significant ( $R^2 = .14$ , *adjusted*  $R^2 = .13$ ,  $F(2, 189) = 15.23$ ,  $p < .001$ ); thus, the set of predictors – eating pathology (EDE-Q) and current use of mental health services (MHS-current) – together account for 13% of the variance in participants' general perceptions of barriers to seeking professional psychological help (BASH-B). Both EDE-Q and MHS-current emerged as significant predictors of BASH-B. Specifically, for every one-unit increase in eating pathology, there was a corresponding 0.19-unit increase in perceived barriers to seeking professional psychological help ( $B = 0.19$ ,  $SE = 0.05$ ,  $p = .001$ , 95% CI [0.10, 0.27]). Furthermore, participants currently receiving mental health services perceived fewer barriers to seeking professional psychological help (relative to those who were not receiving mental health services;  $B = -0.80$ ,  $SE = 0.17$ ,  $p = .001$ , 95% CI [-1.13, -0.45]). For a summary of the MRAs predicting ATSPPH and BASH-B, see Table 11 and Table 12, respectively.

Table 11.  
*Multiple Regression Analysis Predicting ATSPPH, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95 % CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	25.58	1.88	.001	21.73	29.33
BASH-B	-3.61	0.38	.001	-4.34	-2.84
EDE-Q	0.66	0.27	.014	0.16	1.17
MHS-Current	0.99	0.97	.298	-0.99	2.82
MHS-Past	1.74	0.75	.023	0.29	3.20
BMI	0.08	0.06	.156	-0.04	0.02

*Note.* BASH-B = Barriers to Adolescents Seeking Help Scale - Brief Version; EDE-Q = Eating Disorder Examination-Questionnaire; MHS-Past = Past use of mental health services; MHS-Current = Current use of mental health services; BMI = Body mass index.  $R^2 = .40, p < .001$ .

Table 12.  
*Multiple Regression Analysis Predicting BASH-B, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	2.76	0.09	.001	2.58	2.94
EDE-Q	0.19	0.05	.001	0.10	0.27
MHS-Current	-0.80	0.17	.001	-1.13	-0.45

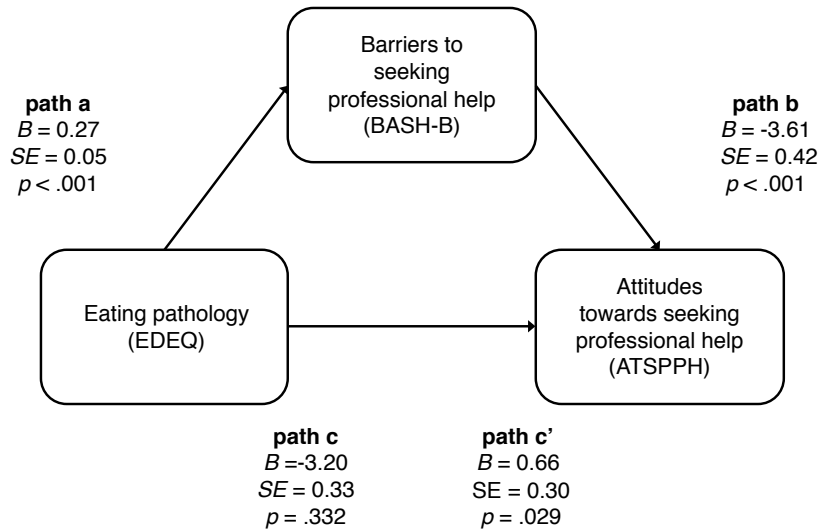
*Note.* EDE-Q = Eating Disorder Examination-Questionnaire; MHS-Current = Current use of mental health services.  $R^2 = .14, p < .001$ .



**Additional analyses.** Based on the results of the MRAs explained for research questions 4a and 4b, a follow-up mediational analysis was conducted to further understand the nature of the relationship between participants' levels of eating pathology, attitudes towards seeking professional psychological help, and perceived barriers to seeking help (operationalized as scores on the EDE-Q, ATSPPH, and BASH-B, respectively). The mediational analysis was conducted using the PROCESS macro. The PROCESS macro uses bootstrapping to estimate and test the significance of assesses the indirect effect of  $X$  on  $Y$  through the mediating variable by generating a sampling distribution of the product term  $ab$  (i.e., product of unstandardized regression coefficients of *path a* and *path b* in Figure 1) and confidence intervals (CIs) for this distribution. If 0 is within the upper and lower limits of the generated CIs, the indirect effect is said to be non-significant; if 0 is *not* within the upper and lower limits of the CIs, the indirect effect is said to be significant.

The mediation model assessed whether participants' perceptions of barriers (MV: BASH-B) mediated the relationship between eating pathology (IV: EDE-Q) and attitudes towards seeking professional psychological help (DV: ATSPPH), with MHS-Current, MHS-Past, and BMI specified as covariates. There was a significant indirect effect of eating pathology on attitudes towards seeking psychological help (through perceived barriers),  $B = -0.98$ ,  $SE = 0.21$ , 95%  $CI [-1.43, -0.57]$ , indicating that the mediation analysis was significant. Because the bootstrapped confidence interval does not contain 0, there is a 95% likelihood that the indirect effect of eating pathology towards seeking psychological help (through perceived barriers) is significantly different from zero.

As depicted in Figure 1, the total effect of eating pathology on attitudes towards seeking help was *not* significant (*path c*),  $B = -3.20$ ,  $SE = 0.33$ ,  $t(189) = -0.97$ ,  $p = .33$ . Eating pathology was a significant predictor of perceived barriers, however (MV; *path a*),  $B = 0.27$ ,  $SE = 0.05$ ,  $t(189) = 5.52$ ,  $p < .001$ . Partialling out the effect of eating pathology, perceived barriers was also a significant predictor of attitudes towards seeking professional psychological help (*path b*),  $B = -3.61$ ,  $SE = 0.42$ ,  $t(189) = -8.70$ ,  $p < .001$ . Interestingly, when partialling out the effect of the proposed mediator (barriers), the relationship between eating pathology and attitudes towards seeking help for psychological problems became significant, (*path c'*),  $B = 0.66$ ,  $SE = 0.30$ ,  $t(189) = 2.20$ ,  $p = .029$ . This analysis represents an inconsistent mediation model (Mackinnon, Fairchild, & Fritz, 2007) with a suppression effect (e.g., Mackinnon, Krull, & Lockwood, 2000). The suppression effect was detected in the mediation model through inspection of the signs of the direct effect (*path c'*; +) and the indirect effect (*ab*; -). In a consistent mediation model, the direct (*path c'*) and mediated (*ab*) effects have the same sign; in an inconsistent model with a suppression effect, however, the direct and mediated effects have opposite signs (Mackinnon et al., 2000; Mackinnon et al., 2007). A further indicator of suppression in the current model is that the statistical removal of the mediational variable (barriers) renders the relationship between eating pathology and attitudes toward seeking professional psychological help significant, whereas the total effect is non-significant (Mackinnon et al., 2000; Shrout & Bolger, 2002).



*Figure 1.* Barriers to seeking professional help significantly mediated the relationship between eating pathology and attitudes towards seeking professional psychological help. The figure depicts an inconsistent mediation model with a suppression effect – as seen in path c', the statistical removal of the mediator (BASH-B) renders the relationship between the independent variable (EDE-Q) and dependent variable (ATSPPH) significant,  $p = .029$ .

**Effect of study condition.** The following analyses pertain to research question 5 through research question 7, which examine whether reading a hypothetical vignette about themselves (self condition) versus a reading vignette about another individual (Lauren; other condition) differentially affects the following outcomes: recognition of the vignette character's disordered eating (5); sources of help for the vignette character (6a, b) and barriers to seeking help (6c); perceived severity of the vignette character's problem (7a); and lastly, the ability of the character to cope with the problem alone (7b). For the independent samples *t*-tests for which Levene's Test was violated ( $ps < .05$ ), the "equal variances not assumed" *t*-statistic was reported (Seek Help, Severity, Cope Alone).

The question of whether reading a hypothetical vignette about themselves (self condition) versus reading a vignette about another individual (other condition) influenced participants' recognition of the vignette character's disordered eating (Recognition-Character; 5a) was analysed using a two-way contingency table analysis. The two-way contingency table analysis allowed for evaluation of whether the proportions of participants endorsing the categories of the dependent variable were the same for the self condition and the other condition (Green & Salkind, 2008). The only assumptions underlying this procedure are (1) independence of observations and (2) sample size – specifically, no more than 20% of the cells should have expected frequencies that are less than five (Green & Salkind, 2008). When all original answer categories were included in the analysis, the two-way contingency analysis was significant (Pearson  $\chi^2(2, N = 192) = 21.09, p = .01$ , Cramer's  $V = .33$ ), but 50% of cells had expected frequencies of less than five. Thus, categories were collapsed on a theoretical basis. Specifically, the original

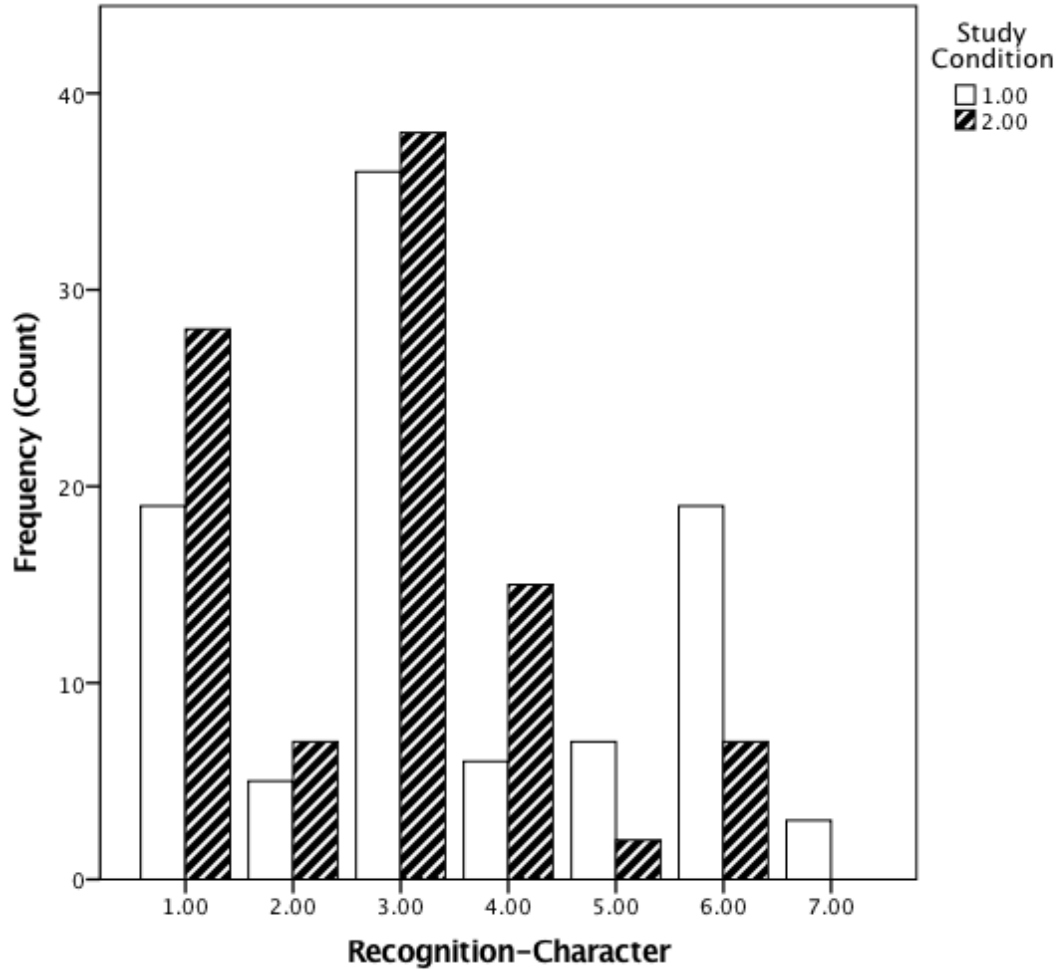
answer categories of “an anxiety disorder or problem”, “stress,” and “a general mental health problem” were collapsed into one category (“other mental health problem”). Furthermore, two participants selected “other” and specified “self-conscious about my body” and “EDNOS”. Based on the nature of their responses, “self-conscious about my body” was included in the collapsed category “other mental health problem” and “EDNOS” was included in the original scale category of “an eating disorder, but not Anorexia Nervosa or Bulimia Nervosa”. Thus, eight categories were used in the final analysis: low self-esteem; Anorexia Nervosa; Bulimia Nervosa; an eating disorder, but not Anorexia Nervosa or Bulimia Nervosa; yo-yo dieting; other mental health problem; no problem; and prefer not to say. The two-way contingency table analysis was significant, Pearson  $\chi^2(2, N = 192) = 17.27, p = .008$ , Cramer’s  $V = .30$ ); thus, the proportion of participants’ endorsing answer categories regarding the vignette character’s main problem differed between the self condition and the other condition. For participants in the self condition, the three most commonly endorsed answer categories were: Bulimia Nervosa ( $n = 36; 37.9\%$ ); low self-esteem ( $n = 21; 22.1\%$ ); and other mental health problem ( $n = 19; 20.0\%$ ). For participants in the other condition, the three most commonly endorsed answer categories were: Bulimia Nervosa ( $n = 38; 39.1\%$ ); low self-esteem ( $n = 31; 32.0\%$ ); and an eating disorder, but not Anorexia Nervosa or Bulimia Nervosa ( $n = 15; 15.5\%$ ). Differences between conditions also became apparent when frequencies across clinical eating pathology categories were collapsed (i.e., BN, AN, “an eating disorder, but not AN or BN”) – 49.5% ( $n = 47$ ) of participants in the self condition endorsed a form of clinical eating pathology as the character’s main problem, compared to 68% ( $n = 60$ ) of participants in the other condition.

To further clarify the influence of study condition on participants' recognition of the character's eating pathology, a multinomial logistic regression was conducted with study condition as the predictor variable, BN as the reference category, and Recognition-Character as the outcome variable. For this analysis, participants who selected "no problem" and "prefer not to say" ( $n = 3$  and  $n = 0$ , respectively) were excluded from analysis due to issues with singularity. The multinomial linear regression was significant, Pearson  $\chi^2(5, N = 189) = 14.67, p = .012$ . Relative to participants who read the vignette about another individual (other condition), participants who read the vignette about themselves (self condition) were 2.87 times more likely to attribute the cause of the vignette character's problem to a general mental health issue (i.e., anxiety, stress, or other mental health problem) than to Bulimia Nervosa (*Exp. B* = 2.87, *SE* = 0.50,  $p = .035$ , 95% CI [1.08, 7.63]). For complete results of the multinomial logistic regression, see Table 13. For an illustration of the proportions of answer categories endorsed across conditions, see Figure 2.

Table 13.  
*Multinomial Logistic Regression Predicting Recognition-Character from Condition, N = 192*

Recognition- Character Category	<i>B</i>	<i>SE B</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp. B</i>	95% CI ( <i>Exp. B</i> )	
						<i>Lower</i>	<i>Upper</i>
Low self esteem	-0.33	0.38	0.78	.38	0.72	0.34	1.50
AN	-0.28	0.63	0.20	.65	0.75	0.22	2.59
Eating disorder, but not AN or BN	-0.86	0.54	2.59	.11	0.42	0.15	1.21
Yo-yo dieting	-2.94	0.84	2.45	.12	3.69	0.72	18.97
Other mental health problem	-1.69	0.50	4.44	.04	2.87	1.08	7.63

*Note.* Reference category = “Bulimia Nervosa [BN]”. Pearson  $\chi^2(5, N = 189) = 14.67, p = .012$ .



*Figure 2.* Recognition-Character categories endorsed by participants across conditions. In the legend, study condition 1 = self condition (i.e., participants who read a hypothetical vignette about themselves) and study condition 2 = other condition (i.e., participants who read a vignette about another individual). On the  $x$ -axis, 1.00 = Low self-esteem; 2.00 = Anorexia Nervosa (AN); 3.00 = Bulimia Nervosa (BN); 4.00 = an eating disorder, but not AN or BN; 5.00 = yo-yo dieting; 6.00 = other mental health problem; 7.00 = [I don't]/[She doesn't] have a problem. A two-way contingency table analysis indicated that the proportion of participants' endorsing Recognition-Character answer categories differed between the study conditions, Pearson  $\chi^2(2, N = 192) = 17.27, p = .008$ .



The question of whether reading a hypothetical vignette about themselves (self condition) versus reading a vignette about another individual (other condition) influenced the *number* of people and activities perceived to be helpful for the vignette character (Helpful People, Helpful Activities; 6b) was assessed using an independent samples *t*-test. Regarding people, the independent samples *t*-test was significant,  $t(190) = -2.10, p = .033, 95\% \text{ CI } [-1.32, -0.05]$ ; relative to participants who read the vignette about another individual (other condition;  $M = 4.38, SD = 2.28$ ), participants who read the vignette about themselves (self condition;  $M = 3.69, SD = 2.25$ ) identified fewer persons whom they believed might be helpful for the vignette character. Regarding activities, the independent samples *t*-test was not significant,  $t(190) = 0.43, p = .67, 95\% \text{ CI } [-0.52, 0.80]$ ; the number of activities identified as being helpful for the vignette character did not significantly differ between the self ( $M = 4.72, SD = 2.57$ ) and other ( $M = 4.57, SD = 2.28$ ) conditions.

Whether study condition (self, other) influenced the *nature* of people and activities perceived to be helpful for the vignette character (Helpful People, Helpful Activities; 6b) was assessed using frequency counts. Regarding persons perceived to be helpful, for participants who read a hypothetical vignette about themselves (self condition), the three persons most commonly identified as being helpful for the vignette character were a mental health professional (70.4%), a close friend (63.3%), and a family member (62.2%). For participants who read a vignette about another individual (other condition), the three persons most commonly identified as being helpful for the vignette character were a mental health professional (83%), a family member (72%), and a dietician (69%). Notable differences in endorsement ( $\geq 10\%$ ) between the self condition

and the other condition included a mental health professional – 70.4% (self) versus 83% (other); a general practitioner – 46.9% (self) versus 62% (other); a dietician or nutritionist – 55.1% (self) versus 69% (other); and a support group – 31.6% (self) and 57% (other). Regarding activities perceived to be helpful, for participants who read a hypothetical vignette about themselves (self condition), the three activities most commonly identified as being helpful for the vignette character were individual therapy (69.4%), talking with a friend (68.4%), and learning about the problem and available services (65.3%). For participants who read a vignette about another individual (other condition), the three activities most commonly identified as being helpful were individual therapy (78%), joining a support group (66%), and learning about the problem and available services (65%). Notable differences in endorsement ( $\geq 10\%$ ) between the self condition and the other condition included exercise – 29.6% (self) versus 13% (other); taking vitamins and minerals – 29.6% (self) versus 18% (other); and joining a support group – 50% (self) versus 66% (other). See Table 14 for descriptive statistics for Helpful People and Helpful Activities.

Table 14.

*Percentage of Participants Endorsing Helpful People and Helpful Activities, N = 198*

	Self condition (n = 98 )	Other condition (n = 100)
<b>Helpful People</b>		
A family member	62.2%	72.0%
A close friend	63.3%	64.0%
An instructor	12.2%	22.0%
A spiritual advisor	21.4%	16.0%
A support group*	31.6%	57.0%
A mental health professional*	70.4%	83.0%
A general practitioner	46.9%	52.0%
A dietician or nutritionist*	55.1%	69.0%
Other	2.0%	1.0%
None of the above	2.0%	0.0%
<b>Helpful Activities</b>		
Individual therapy*	68.0%	78.0%
Admission to a hospital	13.3%	13.0%
Exercise*	29.6%	13.0%
Trying to deal with the problem on [your/her] own	10.2%	3.0%
Talking with a friend	68.4%	60.0%
Talking with a parent	58.2%	64.0%
Attending a support group*	50.0%	66.0%
Group therapy	41.8%	50.0%
Learning about the problem and available services	65.3%	65.0%
Looking for information on the internet	26.5%	17.0%
Joining an internet chat room	5.1%	8.0%
Taking prescription medication	5.1%	4.0%
Taking vitamins and minerals*	29.6%	18.0%
Other	0.0%	1.0%
None of the above	2.0%	0.0%

*Note.* \* indicates a difference between the self and other conditions of  $\geq 10\%$ .

The question of whether reading a hypothetical vignette about themselves (self condition) versus reading a vignette about another individual (other condition) influenced the *number* of factors that might prevent the vignette character from seeking help (Barriers; 6c) was analysed using an independent samples *t*-test. The independent samples *t*-test was significant,  $t(190) = -2.86, p = .002, 95\% \text{ CI } [-1.92, -0.40]$ ; relative to participants who read the vignette about another individual (other condition;  $M = 5.47, SD = 2.83$ ), participants who read the vignette about themselves (self condition;  $M = 4.32, SD = 2.78$ ) identified fewer barriers to seeking help.

To assess whether study condition (self, other) influenced the *nature* of perceived barriers (Barriers; 6c) was assessed using frequency counts. For participants who read a hypothetical vignette about themselves (self condition), the three most commonly endorsed barriers (i.e., factors that might prevent the character from seeking help) were: being too busy (63.3%), not knowing where to go (57.1%), and the risk of other people finding out (52%). For participants who read a vignette about another individual (other condition), the most commonly endorsed barriers were: not knowing where to go (80%), lack of knowledge about mental health (e.g., signs of eating problems; 62%), the risk of other people finding out (59%), and the risk of other people thinking the character is crazy or unstable (59%). Notable differences in endorsement ( $\geq 10\%$ ) between the self condition and the other condition included: being too busy – 63.3% (self) versus 44% (other); lack of availability of services – 11.2% (self) versus 30% (other); not knowing where to go – 57.1% (self) versus 80% (other); not trusting professionals – 15.3% (self) versus 36% (other); other people thinking the character is crazy or unstable – 43.9%

(self) versus 59% (other); and lack of knowledge about mental health – 18.4% (self) versus 62% (other). See Table 15 for descriptive statistics for Barriers.

Table 15.

*Percentage of Participants Endorsing Barriers to Help Seeking, N = 198*

Barriers	Self condition (n = 98)	Other condition (n = 100)
[I am/She is] too busy*	63.3%	44.0%
Waiting times are too long	25.5%	23.0%
The help will be inadequate	25.5%	20.0%
Services are too expensive	43.9%	45.0%
Services are not available*	11.2%	30.0%
[I don't/She doesn't] know where to go*	57.1%	80.0%
[I don't/She doesn't] trust professionals	15.3%	36.0%
There might be a language barrier	3.1%	10.0%
Transportation problems	25.5%	29.0%
Other people might find out	52.0%	59.0%
[I/She] can handle it on [my/her] own	39.8%	36.0%
People will think [I am/ she is] crazy or unstable*	43.9%	59.0%
[I know/She knows] very little about mental health*	18.4%	62.0%
Other	3.1%	8.0%
None of the above	1.0%	1.0%

*Note.* \* indicates a difference between the self and other conditions of  $\geq 10\%$ .

Finally, the questions of whether reading a hypothetical vignette about themselves (self condition) versus reading a vignette about another individual (other condition) influenced the perceived severity of the vignette character's problem (Severity; 7a) and the perceived ability of the character to cope with her problem alone (Cope Alone; 7b) were assessed using independent samples *t*-tests. The independent samples *t*-test for Severity was not significant,  $t(181.08) = -1.82, p = .071$ ; the perceived severity of the vignette character's problem did not significantly differ between participants in the self ( $M = 3.46, SD = 0.65$ ) and other ( $M = 3.62, SD = 0.53$ ) conditions. By contrast, the independent samples *t*-test for Cope Alone was significant,  $t(181.08) = 2.61, p = .010$ ; relative to participants who read the vignette about another individual (other condition;  $M = 1.92, SD = 0.72$ ), participants who read the vignette about themselves (self condition;  $M = 2.26, SD = 1.08$ ) more strongly believed that the vignette character could cope with her problem alone, without seeking any help.

**Barriers and help seeking.** The following exploratory analyses pertain to research question 8, and examine whether the number of barriers perceived are associated with participants' beliefs regarding whether the character should seek help (Seek Help). These questions were analysed using Pearson correlations and MRAs. For research question 8, reporting more barriers was significantly positively associated with believing the vignette character should seek help,  $r = .27, p < .01$ . A MRA was conducted to determine whether the number of barriers reported, study condition, and the interaction between number of barriers and study condition explain significant variance in participants' beliefs regarding whether the vignette character should seek help. The linear multiple regression analysis was significant ( $R^2 = .13, adjusted R^2 = .12, F(3, 188) =$

9.61,  $p < .001$ ); thus, the set of predictors – study condition, number of barriers endorsed (centred), and the interaction between number of barriers and study condition – together account for 11.7% of the variance in participants’ beliefs regarding whether the character should seek help. Each predictor emerged as a significant predictor of participants’ responses to the Seek Help item – specifically, for every one-unit increase in the number of barriers endorsed, there is a corresponding .082-unit increase in the belief that the vignette character should seek help ( $B = 0.08$ ,  $SE = 0.02$ ,  $p = .003$ , 95% CI [0.04, 0.13]). Furthermore, and consistent with results reported earlier in the document, participants in the other condition believed more strongly that the vignette character should seek help (relative to participants in the self condition;  $B = 0.22$ ,  $SE = 0.08$ ,  $p = .005$ , 95% CI [0.06, 0.36]). The interaction between condition and number of barriers endorsed was also a significant predictor of participants’ beliefs regarding whether the character should seek help ( $B = -0.07$ ,  $SE = 0.03$ ,  $p = .013$ , 95% CI [-0.12, -0.02]). A simple slopes analysis was conducted to determine if the simple slopes (i.e., slopes of the regression lines for each condition) significantly differed from zero (Preacher, Curran, & Bauer, 2004). For participants who read the hypothetical vignette about themselves (self condition), for every one-unit increase in the number of barriers perceived, there was a corresponding 0.08-unit increase in the belief that the vignette character should seek help ( $R^2 = .11$ ;  $y = 4.21 + 0.08x$ ). This simple slope was significantly different from zero,  $t(188) = 4.10$ ,  $p < .001$ . By contrast, for participants who read the hypothetical vignette about another individual (other condition), for every one-unit increase in the number of barriers perceived, there was a corresponding 0.01-unit increase in the belief that the vignette character should seek help ( $R^2 = .01$ ;  $y = 4.76 + 0.01x$ ). However, this simple slope was

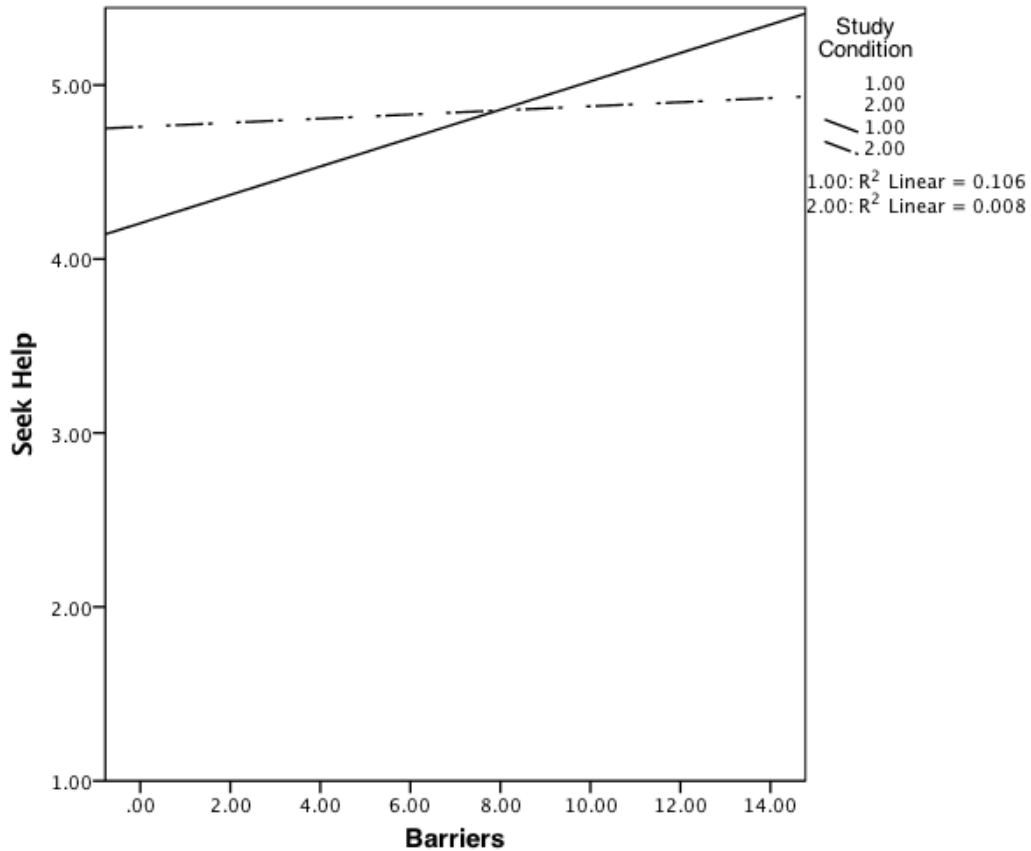


not significantly different from zero,  $t(188) = 0.35, p = .73$ . Taken together, results of the simple slopes analysis therefore suggest that the positive relationship between number of barriers perceived as a predictor of Seek Help is significant only for participants who read the hypothetical vignette about themselves. For a summary of the MRA predicting Seek Help from Barriers, see Table 16. For a visual depiction of the interaction, see Figure 2.

Table 16.  
*Multiple Regression Analysis Predicting Seek Help from Barriers, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	4.60	0.06	.001	4.48	4.72
Condition	0.22	0.08	.005	0.06	0.36
Barriers <sub>c</sub>	0.08	0.02	.003	0.04	0.13
Barriers <sub>c</sub> x Condition	-0.07	0.03	.013	-0.12	-0.02

*Note.* Condition = Self [0], Other [1]; Barriers<sub>c</sub> x Condition = Barriers (centred) x study condition.  $R^2 = .13, p < .001$ .



*Figure 3.* The effect of study condition on the relationship between number of barriers perceived (Barriers) and beliefs about whether the vignette character should seek help (Seek Help). The positive relationship between number of barriers perceived as a predictor of Seek Help is significant only for participants who read the hypothetical vignette about themselves (study condition = 1),  $R^2 = .11$ ,  $y = 4.21 + 0.08x$ ,  $t(188) = 4.10$ ,  $p < .001$ .

**Hypotheses.** Based on the research supporting the self-other discrepancy for general mental health issues in adolescence (Raviv et al., 2000; Raviv et al., 2009; Slone et al., 2013), three specific hypotheses were made. Hypothesis 1 predicted that, relative to participants in the self condition, participants in the other condition would believe more strongly that the vignette character should seek help for her behaviour (operationalized as responses to the Seek Help item). The independent samples t-test was significant,  $t(145.40) = -3.29, p = .002, 95\% \text{ CI } [-0.43, -0.12]$ ; relative to participants who read the vignette about another individual (other condition;  $M = 4.82, SD = 0.38$ ), participants who read the vignette about themselves (self condition;  $M = 4.55, SD = 0.69$ ) less strongly believed that the vignette character should seek help for her behaviour.

Hypothesis 2 predicted that the perceived severity of the vignette character's behaviour (operationalized as responses to the Severity item) would be positively related to the participants' beliefs regarding whether the vignette character should seek help (operationalized as responses to the Seek Help item). In addition to the planned predictor of Severity, ATSPPH significantly correlated with both Severity and Seek Help, and thus was included as a predictor in the regression model. Further, to assess the effect of study condition (self versus other), and to explore the potential interaction between study condition and Severity (centred), an interaction term – Severity<sub>c</sub> x condition – was computed and also included as a predictor in the model. The linear multiple regression analysis was significant ( $R^2 = .54, \text{ adjusted } R^2 = .53, F(4, 186) = 54.82, p < .001$ ); thus, the set of predictors – Severity (centred), study condition, the interaction between perceived severity and condition (Severity<sub>c</sub> x condition), and general attitudes towards seeking professional psychological help (ATSPPH)– together account for 53.1% of the

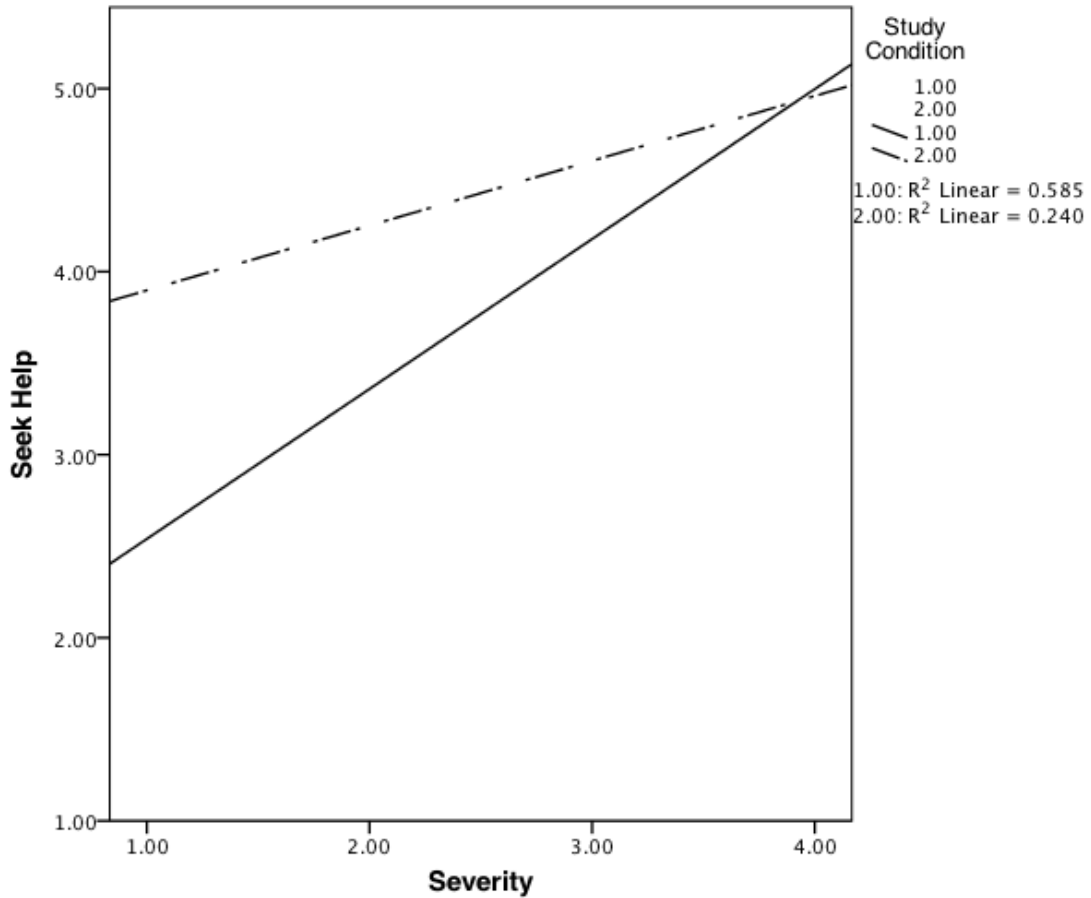
variance in participants' beliefs regarding whether the vignette character should seek help (Seek Help). All predictors included in the model emerged as significant predictors of Seek Help. Specifically, participants who read the vignette about another individual (as opposed to the vignette about themselves) more strongly believed that the vignette character should seek help ( $B = .17, SE = 0.06, p = .005, 95\% CI [0.06, 0.30]$ ). For every one-unit increase in participants' general attitudes towards seeking professional psychological help, there was a corresponding 0.01-unit increase in the belief that the vignette character should seek help ( $B = 0.01, SE = 0.01, p = .040, 95\% CI [0.001, 0.02]$ ). For every one-unit increase in participants' perceived severity of the vignette character's problem, there was a corresponding .80-unit increase in the belief that the vignette character should seek help ( $B = 0.80, SE = 0.06, p = .001, 95\% CI [0.65, 0.92]$ ). Finally, the interaction between Severity<sub>c</sub> and study condition was also a significant predictor of participants' beliefs regarding whether the character should seek help ( $B = -0.47, SE = 0.11, p = .001, 95\% CI [-0.67, -0.25]$ ). A simple slopes analysis was conducted to determine if the simple slopes (i.e., slopes of the regression lines for each condition) significantly differed from zero (Preacher et al., 2004). For participants who read the hypothetical vignette about themselves (self condition), for every one-unit increase in perceived severity of the vignette character's problem, there was a corresponding 0.82-unit increase in the belief that the vignette character should seek help ( $R^2 = .59; y = 1.72 + 0.82x$ ). This simple slope was significantly different from zero,  $t(186) = 12.42, p < .001$ . For participants who read the hypothetical vignette about another individual (other condition), for every one-unit increase in perceived severity of the vignette character's problem, there was a corresponding 0.35-unit increase in the belief that the vignette

character should seek help ( $R^2 = .24; y = 3.54 + 0.35x$ ). This simple slope was also significantly different from zero,  $t(186) = 4.36, p < .001$ . Because simple slopes were significant across both study conditions, an analysis (as outlined by Robinson, Tomek, & Schumacker, 2013) was conducted to determine whether the individual slopes of the simple slope models significantly differed from one another. Results of the secondary analysis indicated that the simple slopes were significantly different from one another,  $t(189) = 2.34, p = 0.02$ . Thus, condition of the study significantly moderated the relationship between perceived severity of the vignette character's problem (Severity) and beliefs about whether the character should seek help (Seek Help). For a summary of the MRA predicting Seek Help from Severity, see Table 17. For a visual depiction of the interaction, see Figure 3.

Table 17.  
*Multiple Regression Analysis Predicting Seek Help from Severity, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	4.42	0.10	.001	4.21	4.62
Condition	0.17	0.06	.005	0.06	0.30
Severity <sub>c</sub>	0.80	0.06	.001	0.65	0.92
Severity <sub>c</sub> x Condition	-0.47	0.11	.001	-0.68	-0.24
ATSPPH	0.01	0.01	.040	0.001	0.02

*Note.* Condition = Self [0], Other [1]; Severity<sub>c</sub> x Condition = Severity (centred) x study condition; ATSPPH = Attitudes towards seeking Professional Psychological Help - Short Form.  $R^2 = .54, p < .001$ .



*Figure 4.* The effect of study condition on the relationship between perceived severity of the vignette character’s problem (Severity) and beliefs about whether the vignette character should seek help (Seek Help). The simple slopes for the self condition [1] ( $R^2 = .59$ ;  $y = 1.72 + 0.82x$ ) and the other condition [2] ( $R^2 = .24$ ;  $y = 3.54 + 0.35x$ ) were significantly different from zero ( $t(186) = 12.42, p < .001$  and  $t(186) = 4.36, p < .001$ , respectively) and from one another ( $t(189) = 2.34, p = 0.020$ ). Thus, study condition significantly moderated the relationship between Severity and Seek Help.



Hypothesis 3 predicted that the perceived ability of the character to cope with her problem alone (operationalized as responses to the Cope Alone item) would be negatively related to participants' beliefs regarding whether the character should seek help. In addition to the planned predictor of Cope Alone, ATSPPH significantly correlated with both Cope Alone and Seek Help, and thus was included as a predictor in the regression model. Further, to assess the effect of study condition (self versus other), and to explore the potential interaction between study condition and Cope Alone (centred), an interaction term – Cope Alone<sub>c</sub> x condition – was computed and also included as a predictor in the model. The linear multiple regression analysis was significant ( $R^2 = .32$ , *adjusted*  $R^2 = .31$ ,  $F(4, 186) = 22.12$ ,  $p < .001$ ); thus, the set of predictors – Cope Alone<sub>c</sub>, study condition, the interaction between perceived ability to cope alone and condition (Cope Alone<sub>c</sub> x condition), and general attitudes towards seeking professional psychological help (ATSPPH) – together account for 30.8% of the variance in participants' beliefs regarding whether the vignette character should seek help (Seek help). All independent variables in the model emerged as significant predictors of variance in Cope Alone. Specifically, for every one-unit increase in participants' attitudes towards seeking professional psychological help, there was a corresponding .015 increase in the belief that the vignette character should seek help ( $B = .015$ ,  $SE = 0.01$ ,  $p = .009$ , 95% CI [0.004, 0.03]). Regarding study condition, participants who read the vignette about another individual (as opposed to the vignette about themselves) more strongly believed that the vignette character should seek help ( $B = .18$ ,  $SE = 0.07$ ,  $p = .015$ , 95% CI [0.04, 0.31]). For every one-unit increase in the perceived ability of the character to cope with the problem alone (without seeking help), there was a corresponding 0.34-unit

decrease in the belief that the vignette character should seek help ( $B = -0.34$ ,  $SE = 0.06$ ,  $p = .001$ , 95% CI [-0.44, -0.22]). Finally, the interaction between Cope Alone<sub>c</sub> and study condition was also a significant predictor of participants' beliefs regarding whether the character should seek help ( $B = 0.20$ ,  $SE = 0.08$ ,  $p = .021$ , 95% CI [0.03, 0.36]). A simple slopes analysis was conducted to determine if the simple slopes (i.e., slopes of the regression lines for each condition) significantly differed from zero (Preacher et al., 2004). For participants who read the hypothetical vignette about themselves (self condition), for every one-unit increase in perceived ability of the character to cope with the problem alone, there is a corresponding 0.36-unit decrease in the belief that the vignette character should seek help ( $R^2 = 0.32$ ;  $y = 5.38 - 0.36x$ ). This simple slope was significantly different from zero,  $t(186) = -7.19$ ,  $p < .001$ . For participants who read the hypothetical vignette about another individual (other condition), for every one-unit increase in perceived ability of the character to cope with the problem alone, there is a corresponding 0.15-unit decrease in the belief that the vignette character should seek help ( $R^2 = 0.08$ ;  $y = 5.11 - 0.15x$ ). This simple slope was also significantly different from zero,  $t(186) = -1.93$ ,  $p = .05$ . Because simple slopes were significant across both study conditions, an analysis (as outlined by Robinson et al., 2013) was conducted to determine whether the individual slopes of the simple slope models significantly differed from one another. Results of the secondary analysis indicated that the simple slopes were significantly different from one another,  $t(189) = -2.10$ ,  $p = 0.037$ . Thus, study condition significantly moderated the relationship between perceived ability of the character to cope alone (Cope Alone) and beliefs about whether the character should seek help (Seek

Help). For a summary of the MRA predicting Seek Help from Cope Alone, see Table 18.

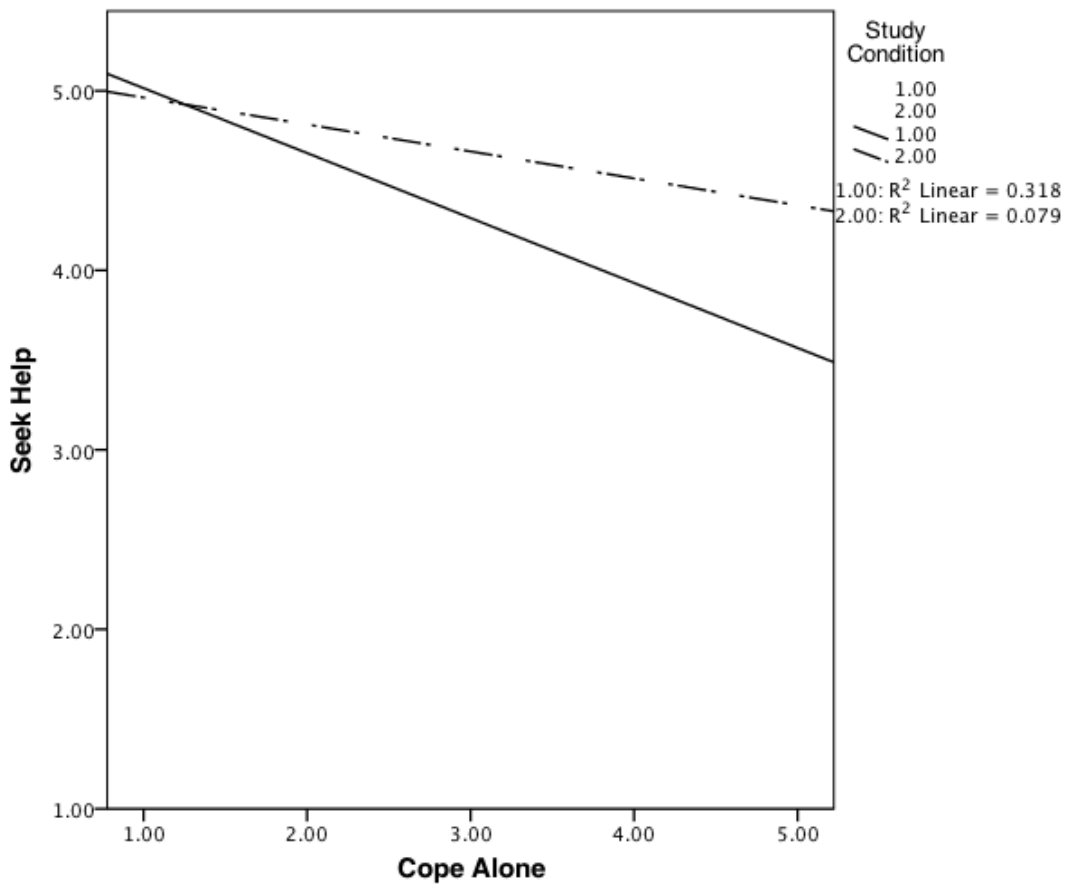
For a visual depiction of the interaction, see Figure 4.

Table 18.

*Multiple Regression Analysis Predicting Seek Help from Cope Alone, N = 192*

Variable	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	95% CI	
				<i>Lower</i>	<i>Upper</i>
(Constant)	4.34	0.13	.001	4.07	4.60
Condition	0.18	0.07	.015	0.04	0.31
Cope Alone <sub>c</sub>	-0.34	0.06	.001	-0.44	-0.22
Cope Alone <sub>c</sub> x Condition	0.20	0.08	.021	0.03	0.36
ATSPPH	0.02	0.01	.009	0.004	0.03

*Note.* Condition = Self [0], Other [1]; Severity<sub>c</sub> x Condition = Severity (centred) x study condition; ATSPPH = Attitudes towards seeking Professional Psychological Help - Short Form.  $R^2 = .32, p < .001$ .



*Figure 5.* The effect of study condition on the relationship between perceived ability of the vignette character to cope with her problem alone (Cope Alone) and beliefs about whether the character should seek help (Seek Help). The simple slopes for the self condition [1] ( $R^2 = .32$ ;  $y = 5.38 - 0.36x$ ) and the other condition [2] ( $R^2 = .08$ ;  $y = 5.11 - 0.15x$ ) were significantly different from zero, ( $t(186) = -7.19, p < .001$  and  $t(186) = -1.93, p = .05$ , respectively) and from one another,  $t(189) = -2.10, p = 0.037$ . Thus, study condition significantly moderated the relationship between Cope Alone and Seek Help.

## CHAPTER 4

### Discussion

The purpose of the present study was to further our understanding of factors that influence help seeking for disordered eating for women in emerging adulthood. The design of the present study was informed by previous research that has examined perceptions of disordered eating and help-seeking (Mond et al., 2010), as well as research examining the self-other discrepancy as it relates to help-seeking for general mental health issues (e.g., Raviv, Sills, Raviv, & Wilansky, 2000; Raviv, Raviv, Vago-Gefen, & Fink, 2009). Although previous research has examined disordered eating (e.g., Mills, Polivy, McFarlane, & Crosby, 2012) and associated help-seeking (Eisenberg, Nicklett, Roeder, & Kirz, 2011; Mond, Hay, Rodgers, & Owen, 2007) across adolescence and into emerging adulthood, the present study represented a novel attempt to understand how these factors interact, with the additional consideration of the potential for a self-other discrepancy (e.g., Howell, Sweeny, & Shepperd, 2014). Previous studies examining women's perceptions of disordered eating have often made use of hypothetical character vignettes (e.g., Gratwick-Sarll, Mond, & Hay, 2013; Mond et al., 2010), as used in the "other" condition of the present study. Although the use of character vignettes allows for the minimization of potential effects of intentional or unintentional denial when self-reporting eating disorder symptoms (Vitousek, Daly, & Heiser, 1991; Vandereycken, 2006), when used in isolation, findings based on these vignettes may lack generalizability (e.g., Raviv et al., 2009). Specifically, in the context of mental health issues in general (Raviv et al., 2009), and disordered eating in particular (e.g., Tillman & Sell, 2013), how an individual perceives another individual's problem is likely to differ from how she

would perceive the same issue in herself (Raviv et al., 2009). Thus, although studies employing the use of character vignettes (from a third-party observer perspective) contribute to the understanding of how we perceive disordered eating (and other mental health issues) in other people (e.g., Mond et al., 2010), the potential existence of a self-other discrepancy complicates the application of these findings in real-world settings. Ultimately, the application of theoretical foundations of the self-other discrepancy (Howell et al., 2014; Kray & Gonzalez, 1999; Trope & Liberman, 2010) to the current research area suggests that beliefs reported by women regarding another individual's disordered eating may not accurately reflect their self-perceptions of their own (current or future) eating behaviours. Accordingly, by determining whether a self-other discrepancy exists for perceptions of disordered eating (and associated preferences for seeking help), the applied value of the present study is rooted in the potential to accurately inform the development of disordered eating prevention and intervention programs for women in emerging adulthood.

Research questions 1 through 4 examined the influence of participants' levels of eating pathology on problem recognition (i.e., recognition of their own pathology), perceptions of another individual's eating behaviours, and general beliefs about seeking help for mental health issues. Research question 1a, which assessed the association between participants' levels of eating pathology and the extent to which they identified their eating behaviours as representing a problem, found self-reported levels of eating pathology were positively associated with higher levels of problem recognition. Specifically, participants with higher levels of self-reported eating pathology more strongly endorsed the belief that they themselves might have a problem with their eating

and food-related behaviours (similar to the problem described in the vignette). This finding is consistent with results of previous studies (e.g., Gratwick-Sarll et al., 2013; Mond, Hay, Rodgers, & Owen, 2006), which have found that young adult women who self-reported as having a problem with eating tended to have higher levels of eating pathology. Also consistent with the findings of Mond et al. (2006) was the positive association between participants' body mass index (BMI) and self-reported recognition of a problem with eating and food-related behaviours. When BMI was included as a predictor in the regression model, however, it did not emerge as a significant predictor of problem recognition; this was also the case for participants' level of perceived barriers to seeking psychological help and participants' history of mental health service use. Taken together, the results suggest that for young women, level of self-reported eating pathology is the strongest predictor of recognizing one's own eating pathology as representing a problem.

In contrast to these findings, analyses pertaining to research question 1b, which examined the association between participants' levels of eating pathology and their recognition of the vignette character's problem, found that participants' self-reported eating pathology did not predict significant variance in recognition of the vignette character's problem. This finding is not consistent with previous research that also examined perceptions of disordered eating using hypothetical character vignettes (Mond et al., 2010), although methods of data analysis differed between the two studies. In a study by Mond and colleagues (2010), participants were classified into one of three (mutually exclusive) categories on the basis of their responses to two items on the EDE-Q: low risk for disordered eating; high risk for disordered eating; or symptomatic (i.e.,



reporting significant pathology). Within these categories, participants' modal responses were examined. Analyses showed that participants classified as being symptomatic were more likely to believe that the vignette character's main problem was depression, and less likely to believe that the main problem was low self-esteem (relative to low-risk and high-risk participants; Mond et al., 2010). Although these findings suggest that perceptions of disordered eating differ for women who report significant pathology themselves, it was decided not to replicate the data analytic procedures used by Mond et al. (2010) in the present study for the following reasons: (a) derivation of subgroups was based on responses to only two items on the EDE-Q; (b) resultant sample sizes were severely unequal ( $n_{\text{low-risk}} = 332$ ,  $n_{\text{high-risk}} = 83$ , and  $n_{\text{symptomatic}} = 94$ ); and (c) data for 247 women who did not meet criteria for any of these groups were excluded from analyses (Mond et al., 2010). Furthermore, categorization of continuous variables is generally frowned upon as statistical practice, as it leads to loss of information (and statistical power) and can bias statistical results (e.g., van Walraven & Hart, 2008). By preserving the continuity of EDE-Q scores in the present study, both internal and external validity are preserved.

Analyses associated with research question 2a found that participants' levels of eating pathology also did not predict significant variance in beliefs regarding whether the vignette character should seek help for her problem. Furthermore, the interaction between eating pathology and study condition also did not predict significant variance in participants' help-seeking beliefs (as they pertained to the vignette character). This specific research question has not (to the author's knowledge) been previously examined in empirical research; thus, it adds to the field by suggesting that, when perceiving the

hypothetical disordered eating of oneself or another female individual, young women's own levels of eating pathology do not appear to influence help seeking beliefs. In interpreting this result, it should also be noted that (on the basis of mean scores for the Seek Help variable), participants across both conditions (regardless of eating pathology) tended to believe that the vignette character should "probably" seek help for her behaviour. Regardless, the lack of association informs our understanding of help-seeking for disordered eating by suggesting that severity of eating pathology (in a non-clinical sample) does not seem to deter young women from believing an individual (self or other) with disordered eating should seek help. Based on findings of previous research, however, we know that women exhibiting symptoms of eating pathology rarely seek help for issues with eating and food (e.g., Meyer, 2005; Mills et al., 2012; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011) – thus, the main question of interest is: why not? Factors found to be significantly associated with participants' beliefs regarding whether the character should seek help in the present study present preliminary answers to this question (although effect sizes were small). Specifically, whether young women read about themselves or another individual in the vignette, whether they were currently receiving mental health services, and their body mass indexes each significantly predicted variance in their beliefs regarding whether the vignette character should seek help. Although the influence of study condition is discussed at length later in the discussion, it is notable that participants who were currently receiving mental health services were significantly more likely to believe that the vignette character should seek help for her disordered eating. This finding is consistent with previous research that found that both adolescents' decisions to seek professional help and adolescents' actual help-seeking

behaviour were predicted by previous help-seeking experiences (Cometto, 2014). These findings support the idea that a history of help-seeking may positively influence attitudes towards seeking help for mental health issues in general (Cometto, 2014), as well as for disordered eating in particular.

Research question 2b, which examined the relation between participants' level of eating pathology and the character's help-seeking preferences, found that self-reported eating pathology was not significantly associated with the number of people or activities perceived to be helpful for the vignette character, nor the number of perceived barriers. To the author's knowledge, this question has not been previously addressed in the empirical literature; thus, it is tentatively concluded that the number of sources of help (i.e., people and activities) and the number barriers to seeking help identified by young women do not appear to differ based on the extent of their eating pathology.

Research question 3a, which examined the relation between participants' level of eating pathology and their perception of the severity of the vignette character's problem, found that level of eating pathology, study condition (i.e., whether young women read about themselves or another individual in the vignette), and the interaction between level of eating pathology and study condition together predicted significant variance in perceptions of severity of the vignette character's problem. Notably, however, the effect size for the analysis was small, and none of the independent variables individually predicted significant variance in perceived severity. Multicollinearity is one explanation for this phenomenon (Cohen, Cohen, West, & Aiken, 2003). When multicollinearity is present in a regression model, the unique variance in the outcome accounted for by each individual predictor variable becomes difficult to estimate (Cohen et al., 2003). For this

specific regression model, however, both tolerance and variance inflation factors (statistical indicators of multicollinearity) were well within acceptable limits (Field, 2009). Regardless of the cause, the findings of analyses pertaining to research question 3a should be interpreted cautiously, and should be replicated before strong inferences can be made. Although analyses differed, Mond et al. (2010) also did not find a significant relationship between eating pathology and perceptions of severity of disordered eating issues in a sample of female university students.

Research question 3b, which examined the relation between participants' levels of eating pathology and perceptions of the vignette character's ability to cope with her problem alone, found that level of eating pathology, study condition (i.e., whether young women read about themselves or another individual in the vignette), and the interaction between level of eating pathology and study condition together did not predict significant variance in perceptions of severity of the vignette character's problem. However, participants who read the (hypothetical) vignette about themselves (as opposed to the other vignette), more strongly believed that the vignette character (themselves) was able to cope with the problem alone, without seeking any additional help. This finding is consistent with results found by Raviv et al. (2009), and will be further discussed later in the discussion (see page 137).

Research question 4a, which examined the association between participants' eating pathology and general attitudes towards seeking professional psychological help, found that level of eating pathology, history of mental health service use (past and current), BMI, and perceived barriers to seeking psychological help together accounted for significant variance in young women's attitudes towards seeking professional

psychological help for general mental health problems. Most relevant to the research question, participants' eating pathology emerged as a significant predictor of attitudes towards seeking professional psychological help (in the presence of other predictors included in the model). When the influence of all other variables was accounted for, higher levels of self-reported eating pathology were associated with more positive attitudes towards seeking professional psychological help. Although this specific question has not been previously examined in the empirical literature, the positive association between eating pathology and attitudes towards help-seeking is somewhat surprising in light of low (self-reported) rates of seeking help for disordered eating (e.g., Meyer, 2005; Mills et al., 2012). However, this finding may be explained by a potential discrepancy between seeking professional help in general versus seeking professional help specifically for disordered eating; supporting this conclusion, previous studies have found that a subset of female adolescents and university students who report disordered eating symptoms also report seeking help for general mental health issues, whereas only a small minority report specifically seeking services for eating pathology (e.g., Swanson et al., 2011; Mond, Hay, Rogers, & Owen, 2007). Within the analyses examining research question 4a, other notable results included the fact that participants with a history of past mental health service use had more positive attitudes towards seeking professional psychological help (consistent with findings of Cometto, 2014 and Gulliver, Griffiths, & Christensen, 2010), which again suggests a positive influence of previous help-seeking experiences. Furthermore, young women who perceived greater barriers to seeking help had more negative attitudes about seeking professional psychological help. Supporting this finding is the research by Raviv et al. (2009), who found that Jewish Israeli

adolescents who perceived a higher level of barriers reported lower levels of perceived psychological benefit to seeking professional help for general mental health issues.

Finally, research question 4b, which examined the association between participants' eating pathology and perceptions of barriers, found that level of eating pathology and current use of mental health services predicted significant variance in perceptions of barriers to seeking help for general psychological issues. Participants' eating pathology emerged as a significant predictor of perceived barriers to seeking help, with higher levels of self-reported eating pathology associated with greater levels of perceived barriers. When considered in conjunction with the finding that eating pathology was also a significant predictor of attitudes towards seeking help, the positive association between eating pathology and perceived barriers presents an interesting paradox. Theoretically, greater perceptions of barriers to seeking help are thought to negatively impact attitudes towards seeking help (e.g., Anderson, 1995; Cometto, 2014); in the present sample, these two constructs were indeed significantly negatively associated with one another. Ultimately, the relation between eating pathology, attitudes towards seeking professional help, and perceived barriers to seeking help is best described by an inconsistent mediation model (Mackinnon, Krull, & Lockwood, 2000; Mackinnon, Fairchild, & Fritz, 2007) that indicates a suppression effect. For this model, the predictor variable is eating pathology, the mediating variable is perceived barriers to seeking help, and the outcome variable is attitudes toward seeking professional psychological help. Referring again to Figure 1, path *a* is positive – thus, increased eating pathology is associated with greater perceived barriers to seeking help – but path *b* is negative – greater perceptions of barriers to seeking help is associated with more negative attitudes

toward seeking professional psychological help. Thus, the indirect effect (path  $a \times$  path  $b$ , or  $ab$ ) is negative. If perceived barriers are held constant, however, eating pathology is associated with more positive attitudes toward seeking psychological help (thus, path  $c'$  is positive). The total effect ( $c$ ) of eating pathology on attitudes toward seeking psychological help therefore appears to be nonsignificant, as it is the sum of  $ab$  (negative) and the direct effect  $c'$  (positive). Taken together, there are two opposing mediational processes present (Mackinnon et al., 2007) – young women with higher eating pathology perceived more barriers to seeking help, which resulted in less positive attitudes towards seeking help for psychological issues; however, when barriers were held constant, eating pathology was associated with more positive attitudes towards seeking help.

Research questions 5 through 7 examined the influence of reading a hypothetical vignette about themselves (self condition) versus reading a vignette about another individual on perceptions of the vignette character's behaviour and beliefs regarding whether she should seek help for her problem. Research question 5, which assessed whether study condition (self or other) influenced recognition of the vignette character's problem, found that recognition significantly differed depending on whether the main character of the vignette was the participant herself or another individual (Lauren). Across both conditions, the two categories that were most commonly endorsed by participants were (1) Bulimia Nervosa (BN) and (2) low self-esteem, a pattern of results consistent with previous research examining perceptions of disordered eating (without manipulation of the vignette character; Mond et al., 2010). In the present study, conditions differed in terms of the third most commonly endorsed category, however – for participants who read about themselves, it was “other mental health problem”; for

participants who read about Lauren, it was “an eating disorder, but not Anorexia Nervosa or Bulimia Nervosa”. A difference between conditions also emerged upon collapsing frequencies across categories of clinical eating pathology – although more than half (68%) of the women who read the vignette about Lauren attributed her behaviour to a form of clinically significant eating pathology, this pattern of responding was indicated by only 49.5% of women who read the vignette about themselves. Finally, follow-up analyses revealed that participants who read the vignette about themselves were significantly more likely (than participants who read the vignette about Lauren) to attribute the cause of their problem to a general mental health issue as opposed to Bulimia Nervosa. Taken together, these findings highlight several factors that are essential to consider when attempting to gain an understanding of how young women perceive symptoms of disordered eating, both in themselves and in other people. Specifically, the broad distribution of endorsement across categories suggests that disordered eating behaviours (whether exhibited by oneself or another individual) were not clearly perceived by young women as being indicative of pathology related to food or eating. For example, and consistent with Mond et al. (2010), a subset of young women in the present sample appeared to perceive disordered eating behaviours as being primarily indicative of issues with self-esteem. Taken together, the discrepancies between the conditions of the study suggest that young women perceive disordered eating behaviours exhibited by other women differently than they perceive the same behaviours in themselves – specifically, young women in the present study were less likely to identify their *own* disordered eating behaviours as representing a type of clinical eating pathology.



Regarding preferences for help seeking, research question 6 examined whether study condition influenced the number and nature of people and activities identified as being sources of help for the character. Relative to participants who read the vignette about Lauren, young women who read the vignette about themselves identified *fewer* persons as being helpful for their problem; in contrast, the number of activities identified as being helpful did not differ as a function of study condition. This question has not been previously addressed in the literature, and as such this finding represents the first evidence that the number of persons perceived as being helpful may differ according to who is experiencing the disordered eating problem (i.e., oneself or another person). Regarding helpful people, participants in both conditions most commonly identified a mental health professional as being a source of help for the vignette character, although endorsement rates were lower in the self condition than in the other condition. The next most commonly endorsed sources of help differed by condition, with women in the self condition identifying a close friend (2) and then a family member (3), and women in the other condition identifying a family member (2) and then a dietician or nutritionist (3). Relative to women who read the vignette about themselves, women who read the vignette about Lauren were more likely to identify a mental health professional, a general practitioner, a dietician or nutritionist, and a support group as being helpful; notably, each of these can be classified under the umbrella of “formal help resources” (e.g., Srebnik, Cauce, & Baydar, 1996). The preferences reported by women who read the vignette about Lauren in the current study are generally consistent with preferences expressed by an Australian sample of women in a similar study by Mond et al. (2010). What the current findings add to the literature, however, is preliminary evidence that persons

perceived as being helpful differ according to who is experiencing the eating pathology – oneself or another individual. In general, the present findings tentatively suggest that young women perceive formal sources of help as being more helpful for another woman with a disordered eating problem than for themselves.

Regarding activities identified as helpful, participants in both conditions most commonly identified individual therapy as a helpful activity for the vignette character, although endorsement rates were lower in the self condition than in the other condition. Although the next most commonly endorsed activity differed by condition – with women in the self condition identifying talking with a friend, and women in the other condition identifying joining a support group – the third most commonly endorsed activity across both conditions was learning about the problem and available services. The activities identified as helpful by women in the present study are relatively consistent with those identified by the Australian sample of women in the study by Mond et al. (2010); these women most commonly endorsed activities including various types of therapy, casually talking about the problem, and getting information about the problem and relevant services. As with persons perceived to be helpful, the present findings represent preliminary evidence that activities perceived as being helpful differ according to who is experiencing the eating pathology – oneself or another individual. Specifically, relative to women who read the vignette about Lauren, women who read the vignette about themselves were more likely to identify exercise and taking vitamins and minerals as being helpful. By contrast, women who read the vignette about Lauren were more likely to identify joining a support group as being helpful.

Research question 6 also assessed whether study condition influenced the number and nature of barriers identified– that is, factors that might prevent the character from seeking help for disordered eating. Relative to participants who read the vignette about Lauren, young women who read the vignette about themselves identified *fewer* barriers to seeking help for their problem. Although this question has not been previously addressed in the literature, a plausible reason for this result is that women reading a hypothetical situation about themselves inherently have a degree of knowledge about their circumstances (e.g., whether they can afford treatment, whether they can transport themselves to treatment, whether there are services available locally) that cannot be assumed when reading about another individual. Across both conditions, the most commonly endorsed barriers included not knowing where to go, being too busy, and concern about other people finding out, suggesting that these factors likely act as significant deterrents preventing young women from seeking help for disordered eating. Relative to women who read the vignette about themselves, however, women who read the vignette about Lauren were more likely to identify barriers indicating a lack of availability of services and a general lack of knowledge about mental health. By contrast, women who read the vignette about themselves were only more likely (than women in the other condition) to identify being too busy as a barrier to help seeking. Taken together, the discrepancies between self and other conditions indicate that young women appear to perceive other women with disordered eating (i.e., Lauren) to have poor mental health literacy – that is, a lack of knowledge about mental health and available services (Jorm, 2000). Low endorsement of barriers associated with poor mental health literacy by

participants reading the vignette about themselves, however, suggests that this perception is inaccurate.

Research question 7 assessed whether study condition influenced the perceived severity of the character's issue, as well as the perceived ability of the character to cope with her issue alone. Although perceived severity of the character's issue did not differ between young women who read the vignette about themselves and young women who read the vignette about another individual, perceived ability of the character to cope with her problem alone differed between study conditions. Specifically, results suggested that young women believed that they were better able to cope their own disordered eating issue alone (without seeking outside help) as compared to other young women. This finding is consistent with that of Raviv and colleagues (2009), who (by using "self" and "other" vignettes, similar to those used in the present study) found that Jewish-Israeli adolescents believed that they were better able than their peers to cope with a mental health problem on their own. The results of the present study replicate those of Raviv et al. (2009), and also extend the concept of self-illusory superiority – the tendency to believe that one's positive qualities are greater than those of others (Brown, 1986, as in Raviv et al., 2009) – in several ways: namely, from a sample of Israeli Jewish adolescents perceiving general mental health problems (as in Raviv et al., 2009), to a sample of Canadian women in emerging adulthood perceiving disordered eating problems.

Research question 8, which assessed whether the number and nature of barriers were associated with participants' help-seeking beliefs, found that for participants who read the vignette about themselves, increases in the numbers of barriers perceived were associated with stronger beliefs that the vignette character (i.e., the participant herself)

should seek help for her disordered eating issue. This finding is interesting, as (a) the association was specific to participants in the self condition, and (b) in general mental health research, perceiving a greater number of barriers tends to be associated with more negative attitudes towards seeking mental health services (Cometto, 2014).

Finally, based on the research supporting a self-other discrepancy in perceiving and seeking help for general mental health issues (Raviv et al., 2000; Raviv et al., 2009; Slone et al., 2013), three specific hypotheses were made. Hypothesis 1 was supported – relative to participants who read the vignette about Lauren, participants who read the vignette about themselves believed less strongly that the character (i.e., the participant herself) should seek help for her disordered eating problem. This finding is consistent with theoretical foundations of the self-other discrepancy, which broadly predict a difference between how behaviours are perceived in oneself versus in another individual (e.g., Howell et al., 2014; Kray & Gonzalez, 1999; Trope & Liberman, 2010). Although there have been few attempts to establish the existence of a self-other discrepancy in terms of seeking help for mental health issues in general (Raviv et al., 2009; Raviv et al., 2000; Slone et al., 2013) and disordered eating in particular (Tillman & Sell, 2013), these studies have generally found that adolescents and young adults are more willing to seek help for a friend with a mental health issue than for themselves. The present finding is therefore consistent with previous research, and extends the literature by bolstering support for the existence of a self-other discrepancy in beliefs about help-seeking for disordered eating in particular. Furthermore, the conclusion drawn by the present study differs from previous research in a minor, yet significant, manner – although previous studies (e.g., Raviv et al., 2009; Tillman & Sell, 2013) support a difference in *willingness*

to seek help for oneself versus another person, the present finding supports a difference in beliefs regarding whether an individual (oneself or another person) *should* seek help for their problem. Thus, this finding may specifically represent a difference between conditions in the perceived *need* of the individual to seek help for eating pathology, which may indirectly suggest a difference in perceptions of the pathological nature of disordered eating itself.

Hypothesis 2, which predicted that the perceived severity of the vignette character's behaviour would be positively related to beliefs regarding whether the character should seek help, was also supported. Specifically, analyses revealed an interaction between perceived severity and the study condition – although increases in perceived severity were associated with increases in the belief that the vignette character should seek help across both study conditions, this association was stronger for participants who read the vignette about themselves. Although empirical investigation of this research question is minimal, previous research has found that adolescents who perceive their mental health problems to be severe are more likely to recognize their symptomatic behaviours as representing a mental health problem, to decide to seek help, and to actually seek help (Cometto, 2014). Furthermore, Raviv et al. (2009) found that adolescents were more willing to seek help, for both themselves and for another individual, for severe mental health problems (as opposed to minor issues). The present study adds to the literature by extending the relationship between perceived severity of a mental health issue and beliefs about help-seeking to the domain of disordered eating. Furthermore, the significant interaction effect represents preliminary support for the idea that the association between perceived severity and beliefs regarding the need to seek

help may differ as a function of who is experiencing the disordered eating (oneself or another individual).

Finally, hypothesis 3 – which predicted that the perceived ability of the character to cope with her problem alone would be negatively related to beliefs regarding whether the character should seek help – was supported. Specifically, analyses revealed an interaction between perceived ability of the character to cope alone and study condition – although increases in perceived ability of the vignette character to cope alone were associated with decreases in the belief that the character should seek help across both conditions, this association was stronger for participants who read the vignette about themselves. Although this finding is consistent with previous research by Raviv et al. (2009), who discovered that help-seeking intentions were negatively associated with perceived ability of an individual (self or other) to cope with a general mental health issue, the significant interaction effect found in the current study is a novel finding. Thus, this result adds to the literature by extending the negative relationship between perceived ability to cope alone and beliefs about help-seeking from general mental health issues to disordered eating in particular. Furthermore, it provides preliminary evidence that the association between perceived ability to cope alone and beliefs regarding the need to seek help may differ as a function of who is experiencing the disordered eating (i.e., oneself or another individual).

### **Summary and Clinical Implications**

Although the majority of findings uncovered by the present study are novel and thus require replication prior to clinical application, they may currently be tentatively applied to further our understanding of how disordered eating is perceived by individuals

in the developmental stage of emerging adulthood, and more specifically to inform our conceptualization of why young women so often fail to seek help for disordered eating. Regarding the influence of young women's own levels of eating pathology, higher levels of self-reported eating pathology were associated with self-reported recognition of these behaviours as representing a significant problem with eating and food. From an applied perspective, this finding suggests that a lack of recognition of one's eating pathology as representing a significant psychological issue is likely not the primary factor preventing young women from seeking help for disordered eating. That said, it is important to consider the possibility that the conceptualization of disordered eating in the vignette may have influenced participants' identification of their own eating pathology as representing a problem. When participants' recognition of their own eating pathology was assessed, it was likened to the behaviours exhibited by the character – specifically, participants were asked if they thought that they might have a *problem such as the one described*. When considered in conjunction with previous research demonstrating that eating issues involving self-induced vomiting are more likely to be recognized as pathological (Gratwick-Sarll et al., 2013), it is possible that the inclusion of self-induced vomiting in the vignette may have influenced the extent to which participants' perceived their own disordered eating to be pathological. Relatedly, it is also possible that the extent to which participants shared disordered eating symptoms with the vignette character may have influenced their endorsement of their own behaviours as representing an eating problem. Although this question requires further study, on the basis of the present findings, it does appear that young women with higher levels of eating pathology are more likely to recognize their symptoms as being problematic. Extrapolating from this, it is unlikely that



young women's problem recognition (or lack thereof) is the primary factor impeding young women from seeking help for disordered eating.

Interestingly, although young women's eating pathology influenced recognition of their own behaviours as representing a problem, it did not appear to influence perceptions of the vignette character's behaviour (regardless of whether the character was the participant herself or another individual, Lauren). Specifically, eating pathology of women in the current sample did not significantly associate with recognition of the character's problem, beliefs regarding whether the character should seek help, the number of barriers and sources of help identified, perceived severity of the character's problem, or perceived ability of the character to cope with the problem on her own. Although research examining the impact of eating pathology on the perception of another individual's disordered eating is minimal, previous studies have detected some influence of eating pathology (e.g., Vitousek et al., 1991; Mond et al., 2010). Although the present study did not support the influence of eating pathology on perceptions of disordered eating, the present findings should be replicated before strong conclusions can be made about the influence (or lack thereof) of eating pathology on perceptions of disordered eating.

In contrast to the aforementioned findings, young women's levels of eating pathology did significantly influence their general attitudes towards help seeking, and also their perceptions of barriers towards help seeking. Interestingly, self-reported eating pathology was found to positively predict both attitudes towards seeking professional psychological help and perceived barriers to help-seeking (in separate analyses). These findings are puzzling at first glance, particularly when considered in light of the fact that

attitudes towards seeking help and barriers to seeking help are significantly negatively associated (both theoretically and in the present study; e.g., Anderson et al., 1995). Upon further analysis, however, this pattern of results was explained through an inconsistent mediation model (with a suppression effect; e.g., Mackinnon et al., 2000; Mackinnon et al., 2007). In an applied context, the results of the mediation model suggest that increases in eating pathology are associated with increases in perceptions of barriers to help-seeking, which in turn are associated with more negative attitudes to seeking psychological help. Although these associations are not necessarily causal, and replication of the results is required prior to application, these preliminary findings suggest that by interrupting the negative association between eating pathology and attitudes towards help-seeking via the indirect path (through the perceptions of barriers, the mediating variable), help seeking for disordered eating could be positively affected. For example, clinical efforts may benefit from active work with young women to (a) identify and (b) amend barriers that are commonly endorsed – for example, being too busy to seek help, or not knowing where to go.

Apart from determining the influence of eating pathology (and other demographic variables) on perceptions of disordered eating in young women, the other main objective of the study was to assess the potential existence of a self-other discrepancy. Across research questions and hypotheses posed by the present study, the majority of results support, in one way or another, the existence of a discrepancy between how young women perceive disordered eating in themselves versus how they perceive disordered eating in other women. Specifically, a self-other discrepancy (inferred based on statistical differences between study conditions) was supported for study outcomes including:

recognition of the vignette character's problem; activities and persons identified as being helpful; barriers to seeking help for disordered eating; perceptions of the character's ability to cope with her problem alone; and finally, beliefs regarding whether the character should seek help for her problem. Furthermore, the main character of the vignette also impacted associations between study variables, including: the positive association between barriers and the belief that the character should seek help; the positive association between perceived severity of the character's problem and the belief that the character should seek help; and the negative association between the character's ability to cope with the problem alone (without seeking help) and the belief that she should seek help. Notably, for each of the aforementioned associations, the relationship between the variables was either only significant or stronger for participants who read the vignette about themselves (relative to participants who read the vignette about Lauren). Although each of the findings supporting the self-other discrepancy warrants further investigation, the main context in which these findings can be applied is in the development of psychoeducation, prevention, and early intervention programs for disordered eating in emerging adulthood. These findings suggest that young women do not appear to perceive disordered eating in another individual in the same manner as they perceive disordered eating in themselves. This discrepancy becomes problematic if studies that consider disordered eating only from the perspective of a third-party individual (for example, in the "other" condition of the present study, and as in Mond et al., 2010) are used as the sole informants for the development of disordered eating programs. Without considering the potential differences between perceptions of disordered eating and associated help-seeking beliefs as a function of who is experiencing

the disordered eating, there is a risk of developing interventions based on information that may not accurately represent the women who actually need these services. Considering that rates of treatment utilization for disordered eating are currently quite low when compared to the number of individuals affected (e.g., Neumark-Sztainer et al., 2011; Hepworth & Paxton, 2007; Tillman, Arbaugh, & Balaban, 2012), it is possible that the development of programs based on inaccurate information may even act as a deterrent that prevents young women from (a) initially participating and/or (b) maintaining involvement with available programs.

### **Limitations and Future Directions**

The present study is not without limitations. Several limitations of the present study relate to the employment and content of the hypothetical character vignettes used to measure perceptions of disordered eating and associated beliefs about seeking help. Although hypothetical character vignettes and/or scenarios have been widely used to study perceptions of mental health issues in general (e.g., Raviv et al., 2000; Raviv et al., 2009) and disordered eating in particular (e.g., Dohnt & Tiggemann, 2006; Mond et al., 2010; Mond, Hay, Rodgers, Owen, & Beumont, 2004; Wright, Jorm, & Mackinnon, 2011), a limitation inherent to their employment is their “hypothetical” nature, and thus the extent to which associated perceptions can be confidently applied to “real life” situations. This limitation is particularly difficult to address in the present study, as the experimental manipulation itself is contingent on the assumption that participants in the “self” condition are identifying with the hypothetical scenario in which they are the main character, and that participants in the “other” condition are perceiving the main character to be another female individual. Although researchers employing the use of character

vignettes have identified the aforementioned as a limitation (e.g., see Raviv et al., 2009), a reliable method of assessing (and potentially reducing) its impact has not yet (to the author's knowledge) been identified. Despite this limitation, the use of hypothetical vignettes has been specifically recommended as a mode of assessing perceptions of disordered eating in order to minimize the potential influence of (intentional or unintentional) denial on self-reported symptoms and associated features (see Vitousek et al., 1991; Vandereycken, 2006). In the present study, details of the vignettes were altered on an individual basis to minimize their "hypothetical" nature and maximize participant identification with the character (while still ensuring essential details did not differ between conditions). For example, in both the self and other conditions, the vignette character shared the participant's age and academic major (if this information was provided by the participant). In addition to altering vignette details to enhance participant identification, future research employing hypothetical character vignettes should consider the use of a "manipulation check" of sorts. Ideally, this will allow for assessment of the extent to which participants identify with the vignette character, and will enable findings to be more confidently generalized to "real life" settings.

Another limitation inherent to the use of hypothetical character vignettes in the present study was the choice of name for the character in the other condition (Lauren). As with the previous limitation, issues associated with the selection of name for a hypothetical character are acknowledged in psychological research, but a solution has yet to be identified (e.g., Kasof, 1993; King, Murray, Salomon, & Tandon, 2004). Although the use of initials (to identify the character in the other condition) was considered, a name was ultimately selected to avoid unintended depersonalizing effects (e.g., Braun &

Gollwitzer, 2012). If feasible, future research employing the use of hypothetical character vignettes should consider matching names to the participant's culture (King et al., 2004), or randomly assigning a name to the vignette character from a predetermined list (without altering any other vignette details).

A final limitation associated with the use of hypothetical character vignettes in the present study was the description of disordered eating symptoms, which may have been more consistent with a diagnosis of BN as opposed to AN or Binge Eating Disorder. As described in the Method section of the document, the hypothetical vignette used in the present study was only slightly adapted from the vignette designed for use by Mond et al. (2010) in their study of eating disorder mental health literacy among young women in Australia. Modifications were only made to the vignette used in Mond et al. (2010) for the purposes of: (a) enhancing the cultural applicability of the symptoms described in the vignette, and (b) allowing the vignette to be applied to both "self" and "other" conditions of the present study. The interpretation of the vignette character's issue as representing BN is not necessarily problematic in and of itself, as the purpose of the present study was to understand perceptions of disordered eating in general (and the vignette character's behaviour was not explicitly labelled). That said, previous research has found that eating issues involving self-induced vomiting are more likely to be perceived as pathological (Gratwick-Sarll et al., 2013); thus, it is possible that study results may have been affected accordingly – for example, problem recognition may have been enhanced due to the inclusion of self-induced vomiting. Although the initial intention of the present study was to use two versions of the vignette – one more consistent with a diagnosis of BN, and another more consistent with a diagnosis of AN – and compare perceptions based on

diagnostic category, this manipulation was not feasible due to the sample size required for adequate power, along with other logistical constraints. Based on these limitations, future studies assessing perceptions of disordered eating should consider altering the behaviours and attitudes experienced by the vignette character (according to clinical guidelines). If feasible, this would allow for a more nuanced assessment of perceptions of disordered eating by comparing perceptions as a function of symptomology.

Final limitations of the present study include (a) the use of item-level analysis and (b) the use of categorical variables. Although all items included in the “self” and “other” versions of the help-seeking for disordered eating survey (see Appendix B and Appendix C, respectively) were developed and applied in previous studies (e.g., Cometto, 2014; Mond et al., 2010; Raviv et al., 2009), the combination of items used to assess perceptions of the vignettes do not represent an empirically validated measure. Unfortunately, this limitation is largely unavoidable in this area of research, as an empirically validated survey of perceptions of disordered eating does not (to the author’s knowledge) exist. Supporting the validity of the items included in the help-seeking for disordered eating questionnaire, however, are correlations between items and associated study variables. Specifically, Seek Help and was significantly positively correlated with ATSPPH, and negatively correlated with BASH-B. Furthermore, Severity and Cope Alone were significantly (positively and negatively) correlated with ATSPPH, respectively, and negatively correlated with one another. In addition to item-level analysis, the use of categorical variables in the present study is somewhat disadvantageous, as this limits the application of statistical analyses intended for continuous variables, and also restricts the amount of variability associated with

responses. For example, categorical items do not allow participants to provide information about potential differences between help source preferences and/or barriers to seeking help (Wilson, Deane, Ciarrochi, 2005). Given the exploratory and relatively novel nature of the present study, however, categorical response variables were advantageous in allowing for maximal breadth of surveying while limiting questionnaire length. Based on information collected in the present study, future studies should consider altering items to allow for continuous data to be collected – for example, participants could rate on a Likert scale whether they believe the vignette character should seek help from various sources (e.g., a psychologist, a family member, a friend, etc.; Raviv et al., 2009) and the extent to which specific barriers would impede them from seeking help from formal and informal sources.

In addition to attempting to amend the limitations associated with the present study (to the extent possible), future studies in this area of research should aim to replicate the results in an independent sample of women in emerging adulthood. If the results are successfully replicated, this will increase the confidence with which the findings can be applied to practical contexts, and can also be used as a basis to inform related research on help-seeking for disordered eating. Future research should also consider the modification and application of the present study in a sample of preadolescent girls, as this stage of development is thought to represent another critical period for the development of disordered eating problems (Balantekin, Savage, Marini, & Birch, 2014). For a more nuanced understanding of factors associated with help-seeking for disordered eating in both emerging adulthood and preadolescence (e.g., preferences for help seeking, barriers to seeking help) future research should consider the collection



of quantitative data (as opposed to categorical), as well as the application of a qualitative interview component. If a longitudinal study is feasible, collecting data from a sample of preadolescents throughout adolescence and into emerging adulthood would provide important information about how disordered eating and associated attitudes and beliefs shift across development.

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## APPENDICES

### Appendix A. Demographics Questionnaire

When is your birthday? Please give the month and year (e.g., April 1990).

My birthday is \_\_\_\_\_.

How old are you?

I am \_\_\_\_\_ years old.

With which gender do you most identify?

- Female
- Male
- Other (please specify): \_\_\_\_\_

Please indicate your marital status:

- Single
- Married/ common-law
- Divorced/separated
- Widowed
- Remarried
- Other (please specify): \_\_\_\_\_

Please indicate your weight: \_\_\_\_\_ lbs

Please indicate your height: \_\_\_\_\_ feet \_\_\_\_\_ inches

Which race or ethnicity do you identify with the most?

- White
- Chinese
- South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
- Black
- Filipino
- Latin American
- Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese, etc.)

- Arab
- West Asian (e.g., Afghan, Iranian, etc.)
- Japanese
- Korean
- Aboriginal
- Other (please specify): \_\_\_\_\_

Please indicate your current year in university:

- First year
- Second year
- Third year
- Fourth year
- Fifth year
- Other (please specify):

Are you a:

- Part-time student?
- Full-time student?

In which country were you born?

- Canada
- US
- Other: \_\_\_\_\_

If not born in Canada, how long have you lived in Canada?

I have lived in Canada for \_\_\_\_ years and \_\_\_\_ months

Are you currently employed?

- Yes
  - Full-time
  - Part-time
    - Job(s) (please specify):

- No

Where do you live right now? (Please select **one**):

- Parental Home
- In residence (alone)
- In residence (shared)
- Off-campus (alone)
- Off-campus (with significant other)
- Off campus (with roommates)
- Other (please specify) \_\_\_\_\_

Do you have a regular source of medical care (e.g., a family doctor)?

- Yes
- No

Are you currently receiving any counselling (professional mental health) services?

- Yes
  - If yes, please describe the services and indicate who provides them (e.g., social worker, psychologist, psychiatrist, etc.):
- No

Have you ever received any counselling (professional mental health) services?

- Yes
  - If yes, please describe the services and indicate who provides them (e.g., social worker, psychologist, psychiatrist, etc.):
- No

## Appendix B. Self Vignette and Questionnaire

You are a [age]-year-old undergraduate [major] student. Although you were mildly overweight as an adolescent, your current weight is within the normal range for your age and height. However, you *think* you are overweight. Upon starting university, you joined a fitness program at the gym and also started running every day. Through your efforts, you gradually began to lose weight. You then started to diet – you strictly avoided all fatty and high-calorie foods, did not eat between meals, and tried to eat fixed portions of only “healthy foods” (mainly fruit, vegetables and nuts) each day. You also continued with your exercise program, losing ten more pounds. However, you have found it difficult to maintain your weight loss. For the past 18 months, your weight has been constantly fluctuating, sometimes by as much as 11 or 12 pounds within a few weeks. You have also found it difficult to control your eating. Although you are able to restrict your dietary intake during the day, at night you are often unable to stop eating – bingeing on, for example, a large bar of chocolate and several pieces of bread. To counteract the effects of your bingeing, you take laxatives to drop weight quickly. At other times, you vomit after overeating. Because of your strict eating and exercising routines, you have become isolated from your friends.

Please answer the following questions based on the paragraph that you read about yourself. If you need to refer back to the paragraph, please click [blank].

What would you say is your main problem? (Select **one**)

- Low self-esteem
- Anorexia Nervosa
- Bulimia Nervosa
- An eating disorder, but not Anorexia Nervosa or Bulimia Nervosa
- Yo-yo dieting
- An anxiety disorder or problem
- Stress
- A general mental health problem
- I don't have a problem
- Other (please specify):

Do you think you should seek help for your behaviour? (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

Please indicate which persons (if any) you believe might be helpful for you (select **all** that apply):

- A family member
- A close friend
- An instructor
- A spiritual advisor
- A support group
- A mental health professional (e.g., a psychologist, psychiatrist, or social worker)
- A general practitioner (family doctor)
- A dietician or nutritionist
- None of the above – I don't need help
- Other (please specify): \_\_\_\_\_

Please indicate which activities (if any) you believe might be helpful for you (select **all** that apply):

- Individual therapy

- Admission to a hospital
- Exercise
- Trying to deal with the problem on her own
- Talking with a friend
- Talking with a parent
- Attending a support group
- Group therapy
- Learning about the problem/available services
- Looking for information on the internet
- Joining an internet chat room
- Taking prescription medication
- Taking vitamins and minerals
- None of the above – I don't need help
- Other (please specify): \_\_\_\_\_

How serious do you feel your problem is? (Select **one**)

- Not serious at all – I don't have a problem
- Not very serious
- Somewhat serious
- Very serious

Do you think that you are able to cope with your problem alone, without seeking any help? (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

If you think you should get help, what are some factors that might prevent you from getting help? (Select **all** that apply)

- I am too busy
- Waiting times are too long
- The help will be inadequate
- Services are too expensive
- Services are not available
- I don't know where to go
- I don't trust professionals
- There might be a language barrier
- Transportation problems (e.g., she can't get a ride)

- Other people might find out
- I think I can handle it on my own
- People will think she is crazy or unstable
- I know very little about mental health (e.g., signs of eating problems)
- None of the above – I don't need help
- Other (please specify): \_\_\_\_\_

Now, please reflect on your own eating attitudes and behaviours (as opposed to the behaviour described in the fictional vignette), and answer the following question.

Do you think you might currently have a problem such as the one described (i.e., a problem with your eating and food-related behaviours?) (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

## Appendix C. Other Vignette and Questionnaire

Lauren is a [age]-year-old undergraduate [major] student. Although she was mildly overweight as an adolescent, her current weight is within the normal range for her age and height. However, Lauren *thinks* she is overweight. Upon starting university, she joined a fitness program at the gym and also started running every day. Through her efforts, Lauren gradually began to lose weight. She then started to diet – she strictly avoided all fatty and high-calorie foods, did not eat between meals, and tried to eat fixed portions of only “healthy foods” (mainly fruit, vegetables and nuts) each day. Lauren also continued with her exercise program, losing ten more pounds. However, she has found it difficult to maintain the weight loss. For the past 18 months, her weight has been constantly fluctuating, sometimes by as much as 11 or 12 pounds within a few weeks. Lauren has also found it difficult to control her eating. Although she is able to restrict her dietary intake during the day, at night she is often unable to stop eating – bingeing on, for example, a large bar of chocolate and several pieces of bread. To counteract the effects of her bingeing, Lauren takes laxatives to drop weight quickly. At other times, she vomits after overeating. Because of her strict eating and exercising routines, Lauren has become isolated from her friends.



“Other” questionnaire

Please answer the following questions based on the paragraph that you read about Lauren. If you need to refer back to the paragraph, please click [blank].

What would you say is Lauren’s main problem? (Select **one**)

- Low self-esteem
- Anorexia Nervosa
- Bulimia Nervosa
- An eating disorder, but not Anorexia Nervosa or Bulimia Nervosa
- Yo-yo dieting
- An anxiety disorder or problem
- Stress
- A general mental health problem
- Lauren doesn’t have a problem
- Other (please specify):

Do you think Lauren should seek help for her behaviour? (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

Please indicate which persons (if any) you believe might be helpful for Lauren (select **all** that apply):

- A family member
- A close friend
- An instructor
- A spiritual advisor
- A support group
- A mental health professional (psychologist, psychiatrist, or social worker)
- A general practitioner (family doctor)
- A dietician or nutritionist
- None of the above – Lauren doesn’t need help
- Other (please specify): \_\_\_\_\_

Please indicate which activities (if any) you believe might be helpful for Lauren (select **all** that apply):

- Individual therapy
- Admission to a hospital
- Exercise
- Trying to deal with the problem on her own
- Talking with a friend
- Talking with a parent
- Attending a support group
- Group therapy
- Learning about the problem/ available services
- Looking for information on the internet
- Joining an internet chat room
- Taking prescription medication
- Taking vitamins and minerals
- None of the above – she doesn't need help
- Other (please specify): \_\_\_\_\_

How serious do you feel Lauren's problem is? (Select **one**)

- Not serious at all – Lauren doesn't have a problem
- Not very serious
- Somewhat serious
- Very serious

Do you think that Lauren is able to cope with her problem alone, without seeking any help? (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

If you think Lauren should get help, what are some factors that might prevent her from getting help? (Select **all** that apply)

- She might be too busy
- Waiting times are too long
- The help will be inadequate
- Services are too expensive
- Services are not available
- She might not know where to go
- She doesn't trust professionals
- There might be a language barrier

- Transportation problems (e.g., she can't get a ride)
- Other people might find out
- She thinks she can handle it on her own
- People will think she is crazy or unstable
- She knows very little about mental health (e.g., signs of eating problems)
- None of the above – she doesn't need help
- Other (please specify): \_\_\_\_\_

Now, please reflect on your own eating attitudes and behaviours (as opposed to the behaviour described in the fictional vignette), and answer the following question.

Do you think you might currently have a problem such as the one described (i.e., a problem with your eating and food-related behaviours?) (Select **one**)

- Definitely not
- Probably not
- Maybe
- Probably
- Definitely

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