WOMEN'S RECOVERY IN THE EATING DISORDERS: EXPLORING THE ROLE OF PERCEIVED MUTUALITY IN CLOSE RELATIONSHIPS AND SOCIAL SUPPORT SATISFACTION

by

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ABSTRACT

Despite significant research attesting to the importance of interpersonal relationships and social support to recovery from an eating disorder, little is known about the relational qualities associated with support satisfaction. Furthermore, the extent to which interpersonal relationships and support satisfaction are associated with recovery, specifically, eating disorder symptom severity and readiness to make changes, remains unanswered in the literature.

Relational/Cultural Theory (RCT) emphasizes the importance of relationships to women's well-being and mental health. RCT posits that chronic disconnection in one's relationships may result in mental distress, including the development of an eating disorder. Consistent with this perspective on the etiology of an eating disorder, RCT suggests that recovery from an eating disorder may occur within the context of mutual relationships.

The current study employed RCT as a framework to explore associations among perceived mutuality in a close relationship, social support satisfaction, eating disorder and psychiatric symptomatology, and readiness for change in a clinical sample (N = 31) of adult women ($\geq$ 18 years) struggling with an eating disorder. The study analyzed cross-sectional data collected from the St. Paul's Hospital Eating Disorders Program, in Vancouver, BC, Canada. As per RCT, it was hypothesized that perceived mutuality in a close relationship and social support satisfaction would be significantly related, and that these two psychosocial variables would be associated with lower eating disorder symptoms and higher readiness for change. Correlational analyses were employed to address the study's research question. Results did not support any of the predicted relationships. Due to the unexpected primary findings, several exploratory post-hoc analyses were conducted. These follow-up analyses extended the study's investigation of perceived mutuality, social support satisfaction, and eating disorder and psychiatric

symptomatology. Results suggest that certain elements of mutuality in a close relationship may be particularly important to support satisfaction. Furthermore, results offered some support for a relationship between perceived mutuality and attitudinal dimensions characteristic of the eating disorders. Overall, however, study findings were inconsistent with hypotheses based on RCT, and thus, question its application as a model within which to understand recovery from an eating disorder for adult women in a clinical context.

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1 INTRODUCTION

Eating disorders (EDs) are a serious and pervasive health concern that effect an individual's psychological, physical, and social well-being. EDs are characterized by cognitive and behavioral symptoms aimed at controlling shape and weight. Cognitive symptoms include intense fear of weight gain or becoming fat, feelings of fatness, and excessive focus on shape and weight as determinants of self-esteem. Behavioral symptoms include extreme restriction of dietary intake, attempts to lose weight or maintain low weight, and bingeing, and compensatory behaviors such as purging (e.g. self-induced vomiting and use of laxatives and/or diuretics) and excessive exercise. The Diagnostic and Statistical Manual of Mental Disorders describes these symptom profiles and designates the criteria for a diagnosis of Anorexia Nervosa (AN), binge-eating/purging or restrictive subtypes, Bulimia Nervosa (BN), purging or non-purging subtypes, and Eating Disorder Not Otherwise Specified (EDNOS; DSM-IV-TR, APA, 2000). Disordered eating behaviors are often considered to exist on a continuum, ranging from no preoccupation with shape and weight to an extreme focus on controlling shape and weight, which characterizes the clinically diagnosable EDs (Scarano & Kalodner-Martin, 1994). In the current research I will refer exclusively to adult women ($\geq$ 18 years old) meeting the DSM-IV criteria for an ED (e.g. AN, BN, or EDNOS; APA, 2000). Individuals with an EDNOS diagnosis are included, given that reports of eating pathology, self-esteem, and global psychiatric distress for this group do not differ significantly from those with AN and BN (Nollett & Button, 2005). Moreover, individuals meeting the criteria of EDNOS often represent the largest group of patients to report to tertiary care (Geller, 2007; Geller, Dunn, Bates, & Zaitsoff, 2005). The estimate of lifetime prevalence for AN is 3.7% and for BN is 4.2% (estimates not available in DSM-IV-TR for EDNOS; APA,

2006); these statistics are thought to under-represent the actual incidence and prevalence rates of EDs in the population.

As previously stated, eating disorders are a serious health problem, resulting in severe medical, psychological, and social consequences. Mortality rates for individuals with AN have been reported at 18.0 %, representing one of the highest rates among DSM-IV-TR mental disorders (APA, 2000; Neumarker, 2000). Medical complications include cardiac arrhythmia, renal dysfunction, endocrine abnormalities, osteoporosis, and infertility (APA, 2006; Pomeroy & Mitchell, 1989). In addition, rates of psychological co-morbidity are high in this group; individuals with EDs frequently suffer from depression and anxiety, and engage in substance use (Blinder, Cumella, & Sanathara, 2006). Subsequently, overall health, functioning, and quality of life are diminished (Hay & Mond, 2006). The health-related consequences of EDs are indeed high, with individuals reporting significant access and utilization of health care services (Mond, Hay, Rodgers, & Owen, 2007). In fact, British Columbia (BC) reports the highest age-standardized hospitalization rates for individuals with EDs in Canada (Gucciardi, Celasun, Ahmad, & Stewart, 2003). Furthermore, the BC government incurs an estimated $2.5 to $101 million per year for long-term disability resulting from AN (Su & Birmingham, 2003).

Individuals with EDs are a challenging group to treat, evidenced by high rates of treatment refusal, attrition, and relapse (Halmi et al., 2005; Pike, 1998). The struggle to relinquish ED behaviors is believed to stem from the subjective experience of functional benefits that are described in relation to ED symptoms (Cockell, Geller, & Linden, 2003; Serpell & Treasure, 2002; Vitousek, Watson, & Wilson, 1998). For example, restriction may numb painful emotions and/or offer the individual a sense of control over otherwise chaotic circumstances (Serpell, Treasure, Teasdale, & Sullivan, 1999). Interpersonal and socio-cultural reinforcement,

and low readiness and motivation for change, and thus, ambivalence regarding treatment, heighten the risk of a protracted course of illness and poor long-term outcomes. Even after receiving intensive inpatient and outpatient treatment, relapse rates range up to 40% for AN and 35% for BN (Herzog et al., 1999; Keel, Dorer, Franko, Jackson, & Herzog, 2005). Re-admission to tertiary care is common (Ro, Martinsen, Hoffart, Sexton, & Rosenvinge, 2005; E. Dunn, personal communication, March 21, 2008). In BC, specialized care is limited, often resulting in extensive waitlists and short duration of inpatient stay (E. Dunn, personal communication, March 21, 2008). Given the severity and chronicity of the EDs, the limited resources, and the costs of intensive treatment to patient, care providers, and our healthcare system, improving understanding of the factors associated with recovery is imperative.

To date, there is limited quantitative research examining the psychosocial factors associated with recovery from EDs. For instance, most outcome studies focus on behavioral indices of change and rarely address the psychological predictors of good outcome or the social contexts conducive to sustained recovery (Bachner-Melman, Zohar, & Ebstein, 2006; Herzog et al., 1999; Lowe et al., 2001; Ro et al., 2005). Yet, in contrast to the pervasive exclusion of psychosocial factors in outcome research, qualitative studies exploring the client's perspective have highlighted social support and interpersonal functioning as critical components of treatment and recovery (Cockell, Zaitsoff, & Geller, 2004; Pettersen & Rosenvinge, 2002; Weaver et al., 2005). Findings indicate that the presence and availability of strong social support is not only necessary to foster and sustain change, its absence is related to increased risk of relapse (Bloks, Van Furth, Callewaert, & Hoek, 2004; Cockell et al., 2004). However, research suggests that individuals with EDs often report low satisfaction with the social support they receive (Grisset & Norvel, 1992; Rorty, Yager, Buckwalter, & Rossotto, 1999) and engage in less social support

seeking as a coping strategy, than non-ED individuals (Bloks et al., 2004). Moreover, individuals with EDs report significant relational difficulties, such as problems expressing one's emotions and needs (Geller, Cockell, & Goldner, 2000) and reduced ability to cope with interpersonal stressors (Bloks et al., 2001). As such, the interpersonal challenges of individuals with EDs may preclude receiving the support they require to make changes to their ED behaviors (Geller et al., 2000).

Despite consistent evidence asserting the importance of psychosocial functioning in relation to EDs (e.g. Striegel-Moore, 1995; Tiller et al., 1997; Rorty, Yager, & Rossotto, 1993), there remains insufficient empirical research that explores these dimensions in the context of recovery, specifically, with respect to the severity of ED symptoms and readiness to change. Moreover, given the qualitative findings highlighting the importance of social support to the recovery process, further research that examines the types and nature of interpersonal relationships associated with positive experiences of social support is warranted.

Relational/Cultural Theory (RCT; Miller & Stiver, 1997) conceptualizes interpersonal processes within a framework that emphasizes the importance of relationships to women's health. RCT states that the chronic absence of mutuality and connection predisposes an individual to psychological dysfunction (Kaplan, 1991; Miller & Stiver, 1997), such as the development and maintenance of an ED (Sanftner, Tantillo, & Seidlitz, 2004). Relational conflict and unmet emotional needs can promote an increased focus on one's body and unhealthy behaviors aimed at controlling shape and weight (Geller et al., 2000; Surrey, 1991a). Within this notion of displacement, it has been hypothesized that unexpressed emotions are re-directed towards the body, in which case, body dissatisfaction may reflect withheld negative affective experiences (Geller et al., 2000). Consistent with RCT's etiological perspective of ED

development and maintenance, it has been theorized that women's recovery from an ED occurs specifically within the context of mutual relationships. Mutuality is thought to increase self-esteem and affirm relational capacities, and therefore foster healing and re-connection (Miller & Stiver, 1997; Sanftner et al., 2004; Tantillo, 2004). The degree of perceived mutuality (PM) experienced in one's interpersonal relationships may also influence the experience of social support, for example, promote connection and engagement with others, and thus, may play a critical role in recovery. Research has yet to apply these theoretical concepts to empirical investigation.

1.1 Current study

Despite ample research on social support and interpersonal functioning, respectively, in the Eating Disorders, little work has been done to bridge these bodies of research. As such, understanding of the relational ingredients associated with social support satisfaction is limited. Specifically, the extent to which perceived mutuality in close relationships is related to social support in the EDs remains unknown. Furthermore, little is known about the relationship of these psychosocial dimensions and the recovery process, specifically, readiness and motivation to change and the severity of ED symptoms. As such, the purpose of the current study was to explore associations among perceived mutuality, social support satisfaction, Eating Disorder and psychiatric symptomatology, and readiness and motivation for change, using Relational/Cultural Theory as a theoretical framework. Psychiatric symptomatology was included in the study given that it has been associated with most of the study's variables, specifically, PM, ED symptoms, and readiness for change.

1.1.2 Objective and research question

As previously stated, the aim of this research was to examine the associations among interpersonal functioning, ED and psychiatric symptoms, and readiness for change in a clinical sample of adult women seeking tertiary care ED treatment. The following research question was addressed: *Is perceived mutuality in close relationships associated with social support satisfaction, ED and psychiatric symptomatology, and readiness for change?*

2 LITERATURE REVIEW

To provide a context for the current study of psychosocial factors associated with recovery from an eating disorder I will present several bodies of research. Specifically, I will review pertinent literature on recovery, social support, interpersonal functioning, and RCT, and highlight the gaps in knowledge that this study aimed to address. I will begin by presenting current perspectives on recovery; this literature reflects the chronic nature of EDs and common treatment challenges. I will provide a brief overview of treatment outcome research to demonstrate the limitations inherent to this form of inquiry. I will then review the ways in which qualitative research has enhanced conceptualizations of the recovery process by exploring the patient's perspective. This research highlights the psychosocial components of recovery, generally overlooked in the quantitative research. I will proceed to justify the importance of social support and interpersonal functioning to the recovery process. I will introduce a relational theory that offers a framework within which to contextualize women's recovery from illness, and review the empirical research examining its application to EDs. Support for the current study will emerge; I will then present a summary of the problem, purpose, objective, and research question.

2.1 Recovery in the eating disorders

Individuals with eating disorders often experience a protracted course of illness. The chronic nature of the disorder reflects, in part, the challenges of engaging this group in treatment (Vitousek et al., 1998). Individuals with EDs are notoriously ambivalent about making changes, evidenced by high rates of treatment refusal, attrition, and relapse (Pike, 1998). The resistance to relinquish ED behaviors is thought to stem from the subjective experience of functional benefits

that are described in relation to symptoms (Cockell et al., 2003; Serpell & Treasure, 2002; Serpell et al., 1999). It has been thought that this reinforcement commonly occurs within interpersonal relationships. For example, research suggests that eating disorder symptoms may be helpful in coping with negative feelings (Zaitsoff, Geller, & Srikameswaran, 2002) and social challenges, or with detaching from personal feelings and the feelings of others (Cockell et al., 2003); hence, the ED helps navigate connection and disconnection in relationships. It is argued that by endorsing eating disordered behaviors, the individual avoids the core relationship difficulty (Cockell et al., 2003; Serpell & Treasure, 2002; Serpell et al., 1999).

As a result of the pervasive treatment resistance common in this group, a significant body of research has examined processes associated with readiness and motivation to make changes to one's ED behaviors (Geller, Drab-Hudson, Whisenhunt, & Srikameswaran, 2004; Treasure & Schmidt, 2001; Vitousek et al., 1998). Higher readiness has been related to various factors, such as increased importance of relationships, increased hope about the future, improvements in self-esteem, shifts in self-concept, satisfaction with one's quality of life (Brown, Bates, & Geller, 2004), insight into the functional benefits of the ED (Cockell, Geller, & Linden, 2003), reduced psychiatric distress (Brown, Lockhart, & Geller, 2005), and treatment enrollment (Geller, Cockell, & Drab, 2001; Geller, Drab-Hudson, Whisenhunt, & Srikameswaran, 2004). Conversely, low readiness has been associated with treatment drop-out (Geller, 2007; Geller et al., 2004) and more severe ED symptoms, specifically, drive for thinness and body dissatisfaction (Geller et al., 2004). In particular, low readiness to increase dietary intake (i.e. reduce restriction) has been shown to predict poor treatment outcomes (Geller et al., 2004). Overall, research suggests that readiness and motivation for change is a critical variable in the recovery process for this population. Yet despite the evident importance of readiness and

motivation, no studies have explored associations among readiness for change, social support, and interpersonal functioning, and there remains insufficient understanding of the social contexts that may promote or hinder engagement in treatment, and thus, the recovery process.

Further evidence of the treatment resistant nature of EDs and the complexities of recovery emerges from treatment outcome studies (e.g. Herzog et al., 1999). Even after intensive inpatient and outpatient treatment, relapse and re-admission rates are high (Herzog et al., 1999; Ro et al., 2005). Knowledge regarding predictors and definitions of successful recovery remains limited however, due to various methodological issues and limitations across the outcome research. For example, predictors of full recovery and relapse remain elusive due to variability regarding what constitutes relapse versus remission, and most importantly, the lack of standard definitions (Couturier & Lock, 2006; Herzog et al., 1999; Kordy et al., 2002). It is also common for investigators to employ different duration criteria for the attainment of partial- or full-remission, or full-recovery (as defined in their study). Furthermore, studies often rely on broad classifications to depict client status at follow-up, such as poor, moderate, or good, which limits understanding of the client's condition (Kordy et al., 2002).

A key limitation throughout this research, of particular interest from a social sciences perspective, is that most outcome studies address recovery within the context of a medical model, focusing on narrowly defined behavioral indices of change (e.g. menstrual regularity and weight gain). Most outcome studies focus "on the quantification of predetermined factors assumed to be pertinent to the alleviation of bulimia and anorexia," (Peters & Fallon, 1994, p. 339) and undervalue the cognitive, emotional, and psychosocial components underlying the manifest symptoms (Bachner-Melman et al., 2006; Garrett, 1997). Despite the consistent omission of psychosocial factors however, their inclusion in a comprehensive long-term outcome

study revealed that severity of social and psychological problems were indeed predictive of poor outcome (Lowe et al., 2001). While these domains are generally under-represented in the outcome research, they warrant further attention.

The aforementioned inconsistencies and limitations across this body of research have impeded the identification of factors reliably promoting and/or inhibiting the recovery process. Further, the inherent assumption that recovery is a measurable endpoint minimizes the multidimensional nature of the process and precludes the identification of a theoretical framework within which to synthesize the complex array of factors implicated in recovery. As such, overall understanding of what contributes to, and constitutes, successful recovery is limited.

2.2 The patient's perspective on recovery: what is actually important?

The pervasive theoretical, clinical, and conceptual deficits apparent in the quantitative outcome research highlight significant gaps in our knowledge, and thus, the need for further inquiry and understanding of recovery. In addition, it has been argued that the criteria and outcomes of interest to researchers and clinicians, reflected in the aforementioned literature, may in fact obscure what is truly relevant to the patient (Peters & Fallon, 1994; Pettersen & Rosenvinge, 2002). It has been posited that the most salient aspects of recovery may resist measurement via traditional quantitative means, and only be accessed through the patient's phenomenological experience (Garrett, 1997). The discrepancy in perspectives and assessments of recovery has been compounded by the consistent identification in qualitative findings of recovery as a process (e.g. Pettersen & Rosenvinge, 2002), rather than a finite endpoint or measurable outcome, as is common in the outcome research (e.g. Herzog et al., 1999).

Significant qualitative research has sought to explore the patient's perspective on recovery with the aim of uncovering elements, previously overlooked, that may be promoting and/or hindering the process. Individuals have reported that improved emotional insight and expression (Weaver, Wuest, & Ciliska, 2005), positive life events (Pettersen & Rosenvinge, 2002), and increased self-esteem (Rorty et al., 1993), contribute significantly to improved health. While many factors have been cited across these studies of recovery, one predominant theme emerges; throughout the literature, individuals consistently report the importance and relevance of psychosocial factors, such as social support from friends, family, and health professionals (Cockell et al., 2004; Hsu, Crisp, & Callender, 1992; Peters & Fallon, 1994; Pettersen & Rosenvinge, 2002; Rorty et al., 1993; Tozzi, Sullivan, Fear, McKenzie, & Bulik, 2002; Weaver et al., 2005). According to recovered patients, strong social support is integral throughout the recovery process and has been associated with both increased motivation and initiative to recover (Rorty et al., 1993; Woods, 2004) and successful maintenance of change following intensive treatment (Cockell et al., 2004; Hsu et al., 1992). In addition, improved interpersonal functioning is consistently reported to be a critical dimension of, and criteria for, recovery (Pettersen and Rosenvinge, 2002; Rorty et al., 1993; Tozzi et al., 2002). In their research with recovered women, Peters and Fallon (1994) identified key themes relating to communication and connection in relationships; increased assertiveness and new interpersonal roles were deemed valuable, reflecting the importance of empowerment and shifts in social functioning as one engages in recovery. Meaningful relationships have been identified to be as important as therapy (Beresin, Gordon, & Herzog, 1989) and a number of studies have identified supportive friends as the most helpful dimension of the recovery process (Nillson & Hagglof, 2006; Rorty et al.,

1993). It is evidenced in this growing body of literature that social support and interpersonal functioning are prominent dimensions of successful recovery.

2.3 Social support in the eating disorders

Social support is an important aspect of recovery from mental illness; perceived availability and adequacy of support, satisfaction with support, size of one's support network, and type of support offered have all been related to mental health status (Corrigan & Phelan, 2004; Grisset & Norvell, 1992; Palmer & Daniluk, 2007). Research has shown that women tend to seek and establish social supports during times of stress (Belle, 1987; Taylor et al., 2000), and that relationship satisfaction is associated with self-esteem and emotional functioning (Wright & Busby, 1997). Overall, it appears that women's relationships play a significant role in sustaining well-being (e.g. Belle, 1987; Miller & Stiver, 1997; Kaplan, 1991).

Qualitative research exploring the experience of recovery from the perspective of recovered individuals consistently cites social support as an integral component. The presence and availability of strong support is not only necessary to foster and maintain change, its absence is related to increased risk of relapse (Bloks, Van Furth, Callewaert, & Hoek, 2004; Cockell et al., 2004). Individuals have identified that high interpersonal conflict hinders their ability to abstain from using the ED to cope, as they work to maintain change following intensive treatment (Cockell et al., 2004). Furthermore, insufficient support is a profound impediment to recovery (Cockell et al., 2004; Rorty et al., 1993; Weaver et al., 2005). However, a significant body of quantitative research examining social support in individuals with EDs suggests that this group experiences significant challenges within their social contexts. Research has shown that these individuals experience less social support (Aime, Sabourin, & Ratte, 2006), report less

satisfaction with support offered (Rorty et al., 1993), and employ less social support seeking as a coping strategy than non-ED controls (Ghaderi & Scott, 2000; Soukup, Beiler, & Terrell, 1990; Troop, Holbrey, Trowler, & Treasure, 1994).

Rorty, Yager, Buckwalter, and Rossotto (1999) assessed several dimensions of social support in women with bulimia (n = 40), women in remission from bulimia (n = 40; recovered for a minimum of one year), and non-ED controls (n = 40). Findings revealed several important distinctions between emotional ("having someone to confide in and lift one's spirits," p. 2) and functional ("thing giving, help giving, and advice giving," p. 2) social support, and the availability of support from family and friends. Bulimic women reported lower availability of friends to provide emotional support and lower satisfaction with the emotional support received from family members. Both bulimic groups reported significantly less availability of family to provide emotional support and were less satisfied with the emotional support received, replicating earlier findings and suggesting that poor familial relationships remain problematic throughout recovery (Rorty et al., 1993). There were no significant differences between women in remission and controls regarding amount of social support from friends, and both groups reported more friendships that the actively bulimic group. Not only do these findings distinguish the experience of social support between ill and recovering individuals, they also indicate that emotional support from friends may promote recovery. Overall, findings suggest that the nature and quality of the support, and by whom it is delivered, may be important factors in the experience of social support.

Grisset and Norvell (1992) explored various dimensions of social support and interpersonal functioning in a group of university women (M age = 20.3; N = 42). Specifically, they assessed the perception of social support, the quality of relationships, social skills, and

psychopathology in bulimic women (n = 21) and non-ED controls (n = 21). The authors examined the 'quality' of relationships, therefore, assessed important relational dimensions typically overlooked in the literature. Quality of relationships was measured for depth (i.e. positivity and importance), conflict, and support (i.e. perceived availability). While findings did not reveal any significant differences between the two groups on depth and support, the BN group reported significantly more conflict. These individuals were also less likely to form close relationships and seek social support, and reported less social competence (i.e. high degree of discomfort in various social situations). With respect to direct measures of social support, bulimic women reported significantly less perceived support from both friends and family. This is an interesting finding in light of the fact that on the measure of relationship quality there were no group differences in perceived availability of support with respect to either of the relationships measured (i.e. family and/or other). These discrepant results point to the need for further understanding of how one's relationships influence the experience of social support. Overall, this study highlights the broad range of challenges common for individuals with bulimia and the various factors impacting their social environments.

In one of the few studies of social support including both women with a diagnosis of AN and those with a diagnosis of BN, Tiller and colleagues (1997) demonstrated several differences between the diagnostic groups regarding the perception of social support. The study participants included female eating disorder patients meeting diagnostic criteria for AN (n = 44) and BN (n = 81), and a control group of female students (n = 86). Social support was considered in light of both structural support (i.e. number of support figures) and quality of support (i.e. emotional and practical support), as measured by the Significant Others Scale (SOS; Power, Champion, & Aris, 1988). Participants completed the scale twice, one for their perceived actual support and one

representing their ideal support. Social support satisfaction scores were generated by calculating the difference score between actual and ideal support. Both the AN and BN groups reported lower ideal scores, less emotional and practical support from friends, and smaller networks, than non-ED controls. With respect to the diagnostic-group differences, women with BN were less satisfied with their social support and reported less support from family and partners than those with AN.

In contrast to Tiller et al. (1997), Aime and colleagues (2006) found no significant differences between individuals with AN (n = 22; M age = 22.68) and BN (n = 18; M age =24.5) on reports of perceived social support. These authors conducted a relatively large study (N = 125) with adult women. The sample consisted of non-ED controls (n = 31; M age = 24.25), women with intense weight and shape preoccupations (n = 33; M age = 28.03), women previously meeting criteria for an ED but now in remission (n = 21; M age = 27.1), and women struggling with an ED (n = 40). Women were recruited from the community and those with an ED were recruited from an outpatient eating disorder program. In this study, both ED groups reported less perceived support than non-ED controls and individuals in remission. The limited differences between diagnostic groups reported by Tiller et al. (1997) may reflect the tendency of individuals with AN restrictive subtype to experience more social isolation and therefore have less opportunity to experience negative social interactions and conflict, a hypothesis supported by the literature on personality traits in individuals with EDs. This research suggests that this group may be, in general, reticent, constrained, and isolated, whereas individuals with BN tend to have more outgoing dispositions, greater affective instability, and higher impulsivity (see Vitousek & Manke, 1994). Given the limited inclusion of individuals with AN in studies of

social support and interpersonal functioning, further research is needed to determine whether and how social experiences differ with ED symptom profiles.

In a study of social support received (i.e. measure of enacted behaviors), Jacobson and Robins (1989) found that women with BN did not report obtaining less social support than non-ED controls, highlighting a potential discrepancy across this body of literature, between what is actually offered and how this may be perceived by individuals with BN. Some authors have postulated that individuals with EDs "could have access to a similar amount of social support as people in control groups, but they are nonetheless unsatisfied with their social network and feel more…isolated" (Aime et al., 2006, p. 67). This perspective is congruent with reports of less social support seeking behavior reported by individuals with EDs (Troop et al., 1994); low satisfaction may reflect the consequences of decreased attempts to connect with others. Holt and Espelage (2002) also found that there were no differences in perceived social support between female undergraduate students (N = 78; M age = 19.22, SD = 1.22) with sub-clinical EDs (n = 39) and non-ED controls (n = 39). Considered within the context of the aforementioned studies (e.g. Aime et al., 1996; Grisset & Norvell, 1992; Rorty et al., 1999; Tiller et al., 1997) this suggests that differences in perception and experience may emerge, and intensify, as the illness progresses (Holt & Espelage, 2002). It must be noted, however, that the distinction between clinical and non-clinical groups has important implications, with respect to the experience of social support (Holt & Espelage, 2002). Most studies of social support in the EDs assess patients receiving treatment, which may influence the nature of one's relationships. For example, enrolling in treatment can be an especially stressful time for the patient and loved ones, and may decrease the amount of contact the patient is having with others (e.g. if the individual enters an

inpatient or residential program). As such, reports of social support and relationship quality may be lower in clinical populations (Holt & Espelage, 2002).

Qualitative research exploring recovery from the patient's perspective emphasizes the influence of social support and interpersonal relationships, yet quantitative research examining specific aspects of social support in the EDs reveals a different picture of the social contexts common for this group. Taken together, the findings from these two bodies of research highlight a central discrepancy between the reported social environments of individuals considering themselves recovered, and those still suffering from an ED. This suggests that the nature of support and/or interpersonal interactions deemed essential to recovery, in retrospect, may be different from what is perceived by individuals still struggling with the illness. This disconnect highlights the complexity of social support experiences throughout the course of the illness and recovery. Further complicating this dynamic is the varying capacity of care providers to offer helpful support to a loved one who is very ill, creating yet another confound (Treasure et al., 2007). While some research has suggested that satisfaction with support may be related to the types of support offered by friends and family and/or the manner in which these support attempts are delivered (Brown & Geller, 2006), no empirical research has explored the ways in which one's close interpersonal relationships, and the specific relational elements characterizing these interactions, may promote or inhibit social support satisfaction.

2.4 Interpersonal functioning in the eating disorders

Individuals with EDs consistently report low levels of satisfaction with the social support they receive from others (Aime et al., 1996; Grisset & Norvell, 1992; Rorty et al., 1999; Tiller et al., 1997), seek less social support than non-ED individuals (Ghaderi & Scott, 2000), and

experience significant interpersonal challenges (Aime et al., 2006; Jones et al., 2006; O'Mahony & Hollwey, 1995). To date, research on interpersonal functioning in the EDs has addressed the dynamics and attributes characterizing various different types of relationships, such as peer/friend, romantic partner, and family (e.g. mother and father). A long standing focus in both clinical and research arenas has been 'family of origin' dynamics [hence, theories of the etiology and maintenance of ED symptoms and the intrinsic role the family plays in the treatment of adolescent EDs (see Treasure et al., 2007)]. With respect to these family relationships, high levels of perceived criticism and parental expressed emotion, and interpersonal disengagement, are among the problems reported by individuals with EDs (e.g. Treasure et al., 2007; van Furth et al., 1996; Wonderlich, Klein, & Council, 1996). A review of the extensive body of research examining family relationships exceeds the scope of this study, given this study's focus on non-familial relationships; nonetheless, associations between interpersonal functioning and ED symptoms are clearly of paramount importance.

Studies examining dimensions of interpersonal functioning across other relationships and contexts have found that this group experiences significant challenges in comparison to healthy individuals. Among these difficulties, it has been suggested that individuals with EDs have problems expressing emotions and needs (Geller et al., 2000), suppressed anger (Zaitsoff et al., 2002), reduced ability to cope with interpersonal stressors (Bloks et al., 2001; Neckowitz & Morrison, 1991), higher rates of conflict and negative interactions (Grissett & Norvell, 1992), low social competence (Espelage, Quittner, Sherman, & Thompson, 2000; Grissett & Norvell, 1992), insecure attachment (Broberg, Hjalmers, & Nevonen, 2001; Evans & Wertheim, 2005) and problems in their relationships with men (Thelen, Farmer, McLaughlin-Mann, & Pruitt, 1990). Furthermore, high levels of yielding and submissive personality styles, such as being overly

accommodating and self-sacrificing, have been reported in this group (Geller et al., 2008; Jones et al., 2006), and are associated with greater ED symptom severity and duration of illness (Jones et al., 2006).

2.4.1 Inhibited self-expression

Empirical research and significant theoretical literature suggest that self-silencing is perhaps the most salient interpersonal characteristic of this group. Feminist theories of development, which focus on the sociocultural influences on personal growth and identity formation, provide the foundation and context for this perspective (Gilligan, 1982; Jordan, 1997; Miller & Stiver, 1997). Gilligan (1982) and others (e.g. Miller & Stiver, 1997) have argued that women experience themselves as relational, and therefore foster intimacy and interconnectedness with others; as a result, the development of individual identity is mutually influenced by, and dependent on, relationships. During early adolescence girls are confronted by the pressure to subscribe to the socioculturally defined gender roles of a patriarchal society (Gilligan, 1982; Striegel-Moore, 1995), which frame successful development, in part, as the achievement of autonomy and reduced relational needs (see Surrey, 1991b). Consequently, one realizes that her needs for intimacy and relationships are not valued, evoking insecurities about the legitimacy and importance of her ideas and concerns; as a result, she may lose her 'voice' (Gilligan, 1982). Due to the influence of male-centered models of development, stemming from the dominance of a patriarchal society, adolescent girls find themselves engaged in a process of individuation that requires they relinquish the relational ties constituting their self-concept. This conceptualization of the relational self has long been associated with women's mental health (Jack & Dill, 1992; Jordan, 1991; Miller & Stiver, 1992) and EDs specifically (Geller, Srikameswaran, & Cassin, in

press; Romney, 1995; Striegel-Moore, 1995), once again highlighting the importance of social contexts to women's well-being.

Extensive literature has explored self-silencing with respect to depression in women (e.g. Jack, 1991; Jack & Dill, 1992; Kaplan, 1991; Sperberg & Stabb, 1998). It has been thought that, in their attempts to maintain relationships, women silence thoughts and feelings which in turn decreases self-esteem and sense of self, and increases externalized self-perception (Jack & Dill, 1992). There is also support for the application of this perspective to the experiences of individuals with EDs, specifically (Geller et al., 2000; Geller et al., in press; Waller, Babbs, Milligan, Meyer, Ohanian, & Leung, 2003; Zaitsoff et al., 2002). Individuals with AN have been shown to report higher levels of suppressed anger and silencing the self [i.e. externalized self-perception, care as self-sacrifice, silencing the self, and the divided self (Silencing the Self measure; Jack & Dill, 1992)] than both psychiatric and healthy controls (Geller et al., 2000). Geller and colleagues (2000) compared women meeting diagnostic criteria for AN (n = 21), psychiatric controls (n = 21), and non-ED individuals (n = 21) on measures of inhibited self-expression and interpersonal orientation. The psychiatric control group was comprised of women meeting a diagnosis of major depressive disorder (n = 11), bipolar disorder (n = 9), or dysthymic disorder (n = 1). Both clinical groups were recruited from hospital-based programs and non-ED individuals were recruited from the community; groups were matched on age and years of education. In Geller and colleagues' study (2000), after controlling for depression, self-esteem, and global assessment of functioning, group differences (i.e. ED, psychiatric, and healthy control groups) were maintained for "care as self-sacrifice" and "silencing the self," highlighting the salience of these particular domains of interpersonal functioning for individuals with an ED. These aspects of self-silencing, and also, the subscale "divided self," were significantly related to

cognitive and affective components of body dissatisfaction, suggesting that suppressed emotion may be re-directed onto the body (Geller et al., 2000). Waller and colleagues (2003) found that suppressed anger was associated with ED symptoms, specifically bulimic behaviors. These authors compared women meeting diagnostic criteria for an ED (n = 140) with non-ED controls (n = 50), to examine facets of anger and their association to core beliefs. Indeed, the ED group has higher levels of both state and suppressed anger than their non-ED counterparts. Considered together, findings from these studies indicate that inhibited self-expression is common across these diagnoses (i.e. AN and BN). Zaitsoff, Geller, and Srikameswaran (2002) found a similar pattern of results in a non-clinical group of adolescent women (N = 235; M age = 14.95, SD = 1.2). They found associations among various disordered eating thoughts and behaviors, suppressed anger, and silencing the self (specifically, silencing the self, externalized self-perception, and divided self; Zaitsoff et al., 2002). These findings are further supported by Serpell and colleagues (1999, 2002), who employed qualitative analyses to explore the functions of AN and BN symptoms from the patient's perspective. Patients reported that the most important function of ED behaviors was the non-verbal communication of difficult emotions, such as sadness, distress, anger, and frustration; the ED was also deemed helpful in managing and avoiding these distressing emotions (Serpell et al., 1999, 2002).

Weschler, Riggs, Stabb, and Marshall (2006) found that self-silencing in partner relationships predicted disordered eating behaviors in a group of healthy college women (N = 149). Of particular relevance in this study was the association between enhanced capacity to tolerate and express emotions, and the recovery process; emotional management was related to decreased reliance on food as a means of coping with distress. This demonstrates a direct relationship between emotion regulation and ED symptomatology (Weschler et al., 2006).

Overall, this body of empirical research affirms the relationship between ED symptomatology and an interpersonal style that focuses on the needs of others to the detriment of personal feelings and thoughts.

In a series of case studies, Romney (1995) highlighted the paradoxical nature of connection and individuation for women struggling with AN and BN, and argued that an essential part of recovery from an ED is reconciling these conflicting needs and desires. She stated that a deeper conception of the intricacies of connection is required in order to understand the complexities of these psychosocial processes. Specifically, that an acceptance of "both/and" (i.e. connection and individuation) rather than "either/or" formulations of being in relationships is necessary to understanding the experience of an ED and recovery (Romney, 1995). She contends that women need to develop an "integrated sense of self that allows for the expression of autonomy as well as experiences of connection" (Romney, 1995, p. 59). For example, in some cases one must sever unhealthy relational ties and develop the independent self, in order to extricate oneself from the ED. This is consistent with several other patient reports, in which individuals have articulated that separation from unhealthy relationships is central to initiating change and recovery (Pettersen & Rosenvinge, 2002; Weaver et al., 1995).

2.5 Social context revisited

Considered together, findings from the literature on recovery, social support, and interpersonal functioning suggest that the experience of social support differs for recovered versus un-recovered individuals, implying that the illness itself may be a core determinant or mediator of one's social context. From this perspective, it is not the interpersonal traits of the patient but rather the disorder that contributes to, and perpetuates, challenges; problems are seen

to occur following ED onset and are likely a response to symptoms (O'Mahony & Hollwey, 1995). For example, individuals suffering from BN report secrecy, shame, and guilt as a result of their behaviors (Burney & Irwin, 2000), which may have a direct impact on the degree of closeness they experience in their relationships and the extent to which they feel socially competent (Rorty et al., 1999) and seek social support (Neckowitz & Morrison, 1991). Individuals with AN may isolate themselves (Vitousek & Manke, 1994), rendering their relationships unfulfilling, and therefore less likely to be sustained. Not only would these interpersonal tendencies reduce the available support (i.e. perceived and actual), they may prevent opportunities for self-expression, a variable associated with recovery (Weaver et al., 1995).

The various relational difficulties presented throughout the literature may indeed prevent individuals with EDs from receiving the social support they need for recovery (Cockell et al., 2004; Geller et al., 2000; Rorty et al., 1999), be it a function of their perception or the actual support offered. On the one hand, this group may have available support but lack the social competencies to access these interpersonal resources (Aime et al., 2006; Grisset & Norvell, 1992). Alternately, the nature of support attempts, including the delivery of these attempts, may be experienced as unhelpful by clients (Brown & Geller, 2006). The discrepancies between what is thought to be supportive and what is actually experienced as supportive may initiate, perpetuate, or result from, interpersonal difficulties (Geller et al., 2008).

Limited efforts have been made to bridge the bodies of research on social support and interpersonal functioning, respectively, or to synthesize the various implications and conclusions documented across studies. Despite the rich information elicited in the qualitative literature, describing the impact of psychosocial factors on recovery, there remains insufficient

operationalization of the broadly defined concepts permeating this work (Hsu et al., 1992). In order to increase understanding of what constitutes "helpful relationships," research must address the specific qualities characterizing these relationships. Findings such as "good, supportive relationships" and "strong social support," do not offer clinically useful information, for the relational ingredients constituting these experiences remain unexplored and unidentified in empirical studies.

While quantitative studies of social support and interpersonal functioning have addressed various relational constructs (e.g. depth, conflict, support; Grisset & Norvell, 1992), these studies generally utilize diverse measures of social support and interpersonal functioning. Moreover, the majority of empirical research fails to employ a theoretical framework of recovery, resulting in deficient conceptualization of the interrelations among these concepts and their role in the change/treatment process. In particular, extant literature focuses on narrowly defined and isolated problems (e.g. interpersonal problem-solving ability; Holt & Espelage, 2002) in particular relationship contexts (e.g. intimate partner or family relationships), negating the bi-directional nature of social interactions and the specific relational elements characterizing these relationships (e.g. modes of communication and emotional expression between individuals; Treasure et al., 2007). Thus, current gaps in knowledge impede the clinical application of findings and enhancement of treatment interventions targeting the psychosocial dimensions of recovery.

To date, the writer is not aware of any empirical research that has explored the interpersonal relationship ingredients (i.e. type, nature, characteristics) associated with positive experiences of social support, such as high satisfaction, and their relationship to the recovery process.

2.6 Relational/Cultural Theory

Relational/Cultural Theory provides the framework for this research. RCT emphasizes the importance of relationships to women's healing processes and overall health (Miller & Stiver, 1997; Surrey, 1991b; Walker, 2004). Rather than focusing solely on the individual's intrapsychic processes (e.g. a medical model of health), RCT locates the self within an interpersonal context that emphasizes the inherent role of others in women's experiences. Similar to Gilligan's work on female development (1982, 1985), RCT contextualizes the relational-self within adult women's physical, mental, and emotional health and well-being across the lifespan. It identifies mutuality and connection in relationships as critical components of psychological growth. RCT states that the chronic absence of these characteristics in one's relationships predisposes the individual to psychological distress (Kaplan, 1986; Miller & Stiver, 1997), such as the development and maintenance of an ED (Surrey, 1991a; Tantillo, 1998; Tantillo, 2004).

2.6.1 Mutuality in close relationships

At the core of RCT are the concepts of connection and mutuality in relationships. Mutual relationships are characterized by the bi-directional movement of thoughts, feelings, and behaviors, the honoring of similarities and differences, space for both people, and attention to the integrity of the relationship (Jordan, 1991). Mutuality involves the constant evolution of the dyadic interaction and is characterized by both receptivity and initiative. This calls upon one's capacity to simultaneously identify personal feelings and thoughts, and understand and appreciate these dimensions of another person's experience. It is the experience of mutual empathy in a relationship. This requires "emotional vulnerability, attunement, and responsiveness to the subjective experience of the other on a cognitive and affective level, and an

acceptance of the whole person," (Tantillo, 2006, p. 83). Relationships embodying mutuality are thought to facilitate insight into one's own and others' thoughts, feelings, and needs, and thus, enhance self-growth and self-worth. Such relationships influence one's motivation to engage in pro-active helpful behaviors for self and others. In addition, increased vitality and energy heighten one's desire to engage in mutual and connected exchanges with others (Jordan, 1991). Hence, the effects of mutuality are thought to extend beyond the immediate relationship, to broader social networks.

Within the context of RCT, disconnection is described as a lack of validation and mutuality in relationships (i.e. empathic failings). Persistent disconnection depletes the individual's capacity and desire to identify and relate to her thoughts and emotions, based on the notion that they are not valued in her relationships (Miller & Stiver, 1997). Subsequently, self-worth and self-efficacy decrease; this perpetuates disconnection by reducing one's social support seeking behaviors. In order to preserve what remains of a deficient connection, a woman must withhold feelings or thoughts that may deviate from those of others, therefore suppress her authentic self (Miller & Stiver, 1997). As such, relational conflict and unmet emotional needs can promote an increased focus on one's body and unhealthy behaviors aimed at controlling shape and weight (Geller et al., 2000). Significant support for his conceptualization of ED etiology and maintenance exists in the aforementioned research on interpersonal functioning. Specifically, strong evidence has been generated by studies depicting the high prevalence of inhibited self-expression in individuals with EDs (Geller et al., 2000; Zaitsoff et al., 2002) and the relationship between ED symptoms and emotion regulation (Serpell & Treasure, 2002; Serpell et al., 1999).

Extending the theoretical framework of ED etiology and maintenance posited by RCT, recent work has suggested that women's recovery from an ED occurs specifically within the context of mutual relationships, with connection promoting positive self-growth, health, and healing (e.g. Sanftner et al., 2004; Tantillo, 1998, 2004). Considered with the literature on social support and interpersonal functioning in the EDs, this theoretical tenet unites previously distinct relational concepts. For example, extant empirical research frames social support in this population as one of client-receptivity, hence, a one-way, disconnected engagement whereby the client does not contribute or influence the process; she simply receives what is provided. However, in light of the research describing the interpersonal difficulties common to this population, the process of social support may be better conceptualized as a mutually influenced process. For example, the relational challenges reported by individuals with EDs suggest that the experience of support is a function of the interpersonal dynamics characterizing their relationships. Research has yet to explore this directly.

The concept of mutuality, as defined by RCT, may be particularly salient to individuals struggling with an ED. Specifically, this relational dynamic may be underlying certain interpersonal interactions and thus, the experience of social support. Not only does mutuality encompass empathy and understanding, both cited as crucial in the social support and recovery literature, it also affords the individual a sense of empowerment, contribution, and voice in the relationship, all critical dimensions of successful recovery from an ED (Peters & Fallon, 1994; Weaver et al., 2005). Existing literature suggests that having the space and safety to express one's emotions and needs, as is the case in highly mutual relationships, is imperative to the reduction of ED symptoms (e.g. Geller et al., 2000).

2.6.2 Perceived mutuality in women's health

Perceived mutuality (Genero, Miller, Surrey, & Baldwin, 1992b) is the extent to which one identifies her close relationships as connected and mutually empathic. The measurable construct of 'perceived mutuality' renders an otherwise intangible concept (i.e. good relationships) to discrete relational elements amenable to empirical investigation (Genero et al., 1992b). While relationship quality in the EDs has been addressed (e.g. Holt & Espelage, 2002), the modes of assessment have been quite varied and rarely access the characteristics most salient to individuals with EDs. For example, Holt and Espelage (2002) assessed relationship quality using the Quality of Relationships Inventory (QRI; Pierce, 1994), which measures support, conflict, and depth. However, the authors only included the conflict subscale in analyses. Exclusion of the two other scales limited the extent to which findings could inform current understanding of relationship characteristics and quality in this group.

In light of the qualitative literature on recovery in the EDs, one could argue that characteristics such as empowerment (Nilsson & Hagglof, 2006; Weaver et al., 2005), empathy and understanding (Rorty et al., 1993), and self-expression (Pettersen & Rosenvinge, 2002; Weaver et al., 2005) in one's relationships would be among the most salient elements with respect to improved health status. Thus, the assessment of PM as a reflection of relationship quality not only enables the examination of the theoretical tenets of RCT, it enables an exploration of the interpersonal processes and characteristics frequently implicated in recovery from an ED, as reported by the patient.

Several studies have assessed the relationship of perceived mutuality to women's mental and physical health. It has been shown to play a significant role in psychosocial adaptation to cancer (Kayser, Sormanti, & Strainchamps, 1999) and to consistently predict depression (Genero

et al., 1992; Powell, Denton, & Mattson, 1995; Sperberg & Stabb, 1998), and has been deemed important in group relational therapy for EDs (Tantillo, 2003).

Drawing on RCT, Kayser, Sormanti, and Strainchamps (1999) proposed that relational factors play an integral role in a woman's adaptation to serious illness. Specifically, their research explored the role of PM in psychosocial adjustment to cancer. Women in this study (N = 49; M age = 36, SD = 5.6) were diagnosed with cancer three months to three years prior to study commencement (M = 9.75 months, SD = 6.2), currently receiving a form of treatment, and caring for a young child (< 12 years of age). Results indicated that mutuality in one's partner relationship was a significant predictor of quality of life [B(.36)], depression [B(-.31)], and self-care agency [B(.33), ps < .05]. Sperberg and Stabb (1998) explored associations between PM in one's relationship with a romantic partner, expression of anger, and depression. This large study of college women (N = 223; M age = 26.05, SD = 8.46) found that both low mutuality and high suppressed anger were related to depression. Specifically, correlational analyses revealed a significant relationship between PM and suppressed anger (r = -.38, p < .01); further, PM and suppressed anger were significantly related to depression (r = -.44 and r =.52 respectively, ps < .01). A hierarchical multiple regression analysis examining the extent to which expressed anger, suppressed anger, and mutuality predict depression revealed that PM predicted depression above and beyond suppressed anger. The association between depression and PM is supported by Powell and colleagues (Powell, Denton, & Mattison, 1995), who assessed the degree to which PM in the mother-adolescent relationship predicted depression. For adolescent girls in this study (N = 142), lower PM was associated with higher levels of depression.

Recently, Wechsler, Riggs, Stabb, and Marshall (2006) investigated ED symptoms, self-silencing, and mutuality in partner relationships in a sample of healthy college women (N = 149).

Mutuality was negatively correlated with overall self-silencing (r = -.37, p = .0001). It was also negatively correlated with interpersonal distrust (r = -.29, p < .001) and interoceptive awareness (r = -.26, p = .004), two psychological characteristics associated with disordered eating (Garner, 1991). Interpersonal distrust refers to a general inhibition with respect to close relationships and interoceptive awareness refers to one's ability to identify and label affective states and bodily sensations (Garner, 1991). Intuitively this makes sense, given that mutuality requires openness with another and the ability to identify one's own and another's thoughts and feelings. As such, what is most interesting about these findings is that, despite the association between mutuality and these attitudinal dimensions of disordered eating, there were no significant relationships between mutuality and the symptom-based variables (i.e. Drive for Thinness, Bulimia, and Body Dissatisfaction, as measured by the Eating Disorders Inventory-2; Garner, 1991). This suggests that, although partner mutuality is related to attitudinal and personality correlates of eating dysfunction, it may not be associated with behavioral symptoms of an ED (Wechsler et al., 2006). However, to postulate a strong and direct relationship between PM and disordered eating behaviors may be premature, given the multifaceted etiology of EDs, and the numerous variables potentially mediating this relationship (e.g. other interpersonal factors such as social support). In addition, the participants' mean symptom scores were not compared to clinical norms; differences in the severity of symptomatology between clinical and non-clinical samples may have obscured the findings. Despite these limitations, findings support the notion that mutuality and self-silencing are related to disordered eating and suggest that further research with clinical samples is warranted to increase our understanding of the relationship of PM to EDs.

Sanftner and colleagues' (2006) comprehensive study with college women (N = 397; M age = 19.57, SD = 3.76) addressed the relations among disordered eating attitudes, beliefs, and

behaviors, self expression, and mutuality in family relationships. The authors included several measures of perceived mutuality (e.g. mother and father, and partner relationships), and included an assessment of family emotional expression [e.g. levels of perceived criticism (PC) and emotional involvement (EI)]. A large body of research has demonstrated the association between ED symptoms and levels of emotional expression in families (e.g. Treasure et al., 2007; van Furth et al., 1996). The authors hypothesized that mutuality would predict ED symptoms after controlling for the family-related variables. Multiple regression analyses examined the degree to which PM predicted ED behaviors above and beyond PC and EI. Results revealed a similar pattern as those reported by Wechsler and colleagues (2006). Specifically, PM was related predominantly to the cognitive features of EDs (i.e. attitudinal and personality correlates of eating pathology; Garner, 1991) rather than the symptom-based variables (i.e. drive for thinness and bulimia; Garner, 1991). Exceptions were that low PM with mothers predicted bulimia scores and low PM with partners predicted body dissatisfaction scores, above and beyond PC and EI (Sanftner et al., 2006).

2.6.3 Perceived mutuality in the eating disorders

Preliminary research exploring the relationship between PM and disordered eating in community samples lends support to the associations established in the theoretical literature, in that, disconnection and connection in relationships are related to EDs and recovery respectively. Results from these studies indicate that further investigation with clinical populations is warranted, in order to increase the knowledge base and elucidate the findings established in this early work (Sanftner et al., 2006; Wechsler et al., 2006). In addition, the significant empirical, clinical, and theoretical literature on interpersonal functioning in the EDs, more broadly,

indicates the salience of mutuality, or lack thereof, as a characteristic of close relationships for individuals with EDs. In their qualitative study of recovery (N = 30, M age = 29), Peters and Fallon (1994) described a continuum of relational connection, ranging from alienation to connection; they found that themes depicting successful recovery mapped closer to connection. Hence, along this continuum, proximity to connection represented the simultaneous improvement of ED symptoms and interpersonal functioning. Furthermore, the interpersonal characteristics and problems commonly reported by individuals with EDs, such as inhibited self-expression (Geller et al., 2000), suppressed anger (Zaitsoff et al., 2003), and decreased ability to identify one's emotional experiences (Quinton & Wagner, 2005; Sim & Zeman, 2004), correspond to the concept of relational disconnection captured by low PM.

Within the context of recovery from an ED, the relational outcomes generated by mutual relationships (Jordan, 1991) are similar to the shifts associated with successful symptom reduction and maintenance of change. For example, highly mutual relationships include increased ability to engage in activities that help oneself, ameliorated insight into one's emotions and thoughts, and increased self-worth (Jordan, 1991), which are all thought to increase women's self-esteem (Surrey, 1991b). Not only has each of those independent processes been associated with recovery from an ED, enhanced self-esteem and improvements in emotion regulation and insight have been reported to be key component of successful recovery (Rorty et al., 1993; Weaver et al., 2005). In addition, RCT posits that strong mutuality encourages and promotes social connections (Surrey, 1991b), and therefore, experiencing mutuality in a close relationship may increase one's overall social network (Genero et al., 1992b). This is particularly important given the significance of strong social support to recovery. In light of the fact that individuals with EDs report lower social support seeking (Troop et al., 1994) and smaller networks than non-

ED individuals (Rorty et al., 1999), relational qualities that promote social support could be particularly helpful.

As previously stated, despite significant theoretical associations between PM and EDs, there is a paucity of empirical research. I was only able to locate two published research studies to date that explore PM in clinical populations of individuals with diagnosed EDs. Furthermore, these studies possess several key limitations, such as small sample sizes and a limited focus on bulimic symptoms (i.e. virtual exclusion of individuals with AN or EDNOS).

Tantillo and Sanftner (2003) first addressed PM in a small study comparing group relational therapy and group cognitive-behavioral therapy for women with BN and Binge Eating Disorder (BED; DSM-IV-TR, APA, 2000). They examined the relationships among PM and bulimic and depressive symptoms. Means at baseline indicated that lower PM with one's father was associated with higher bulimic symptoms, specifically bingeing and vomiting episodes. Lower PM with both parents was inversely related to depression scores, supporting the findings generated in community samples of women and adolescent girls (Kayser et al., 2005; Powell et al., 1995). However, several limitations, such as the small sample size (N = 15) and exclusion of individuals with AN and EDNOS, restrict the implications and generalizability of these findings. Beyond these methodological weaknesses there exist various conceptual issues pertaining to the assessment of PM itself. Specifically, the extent to which mutuality with one's father accurately portrays, or measures, the quality of this relationship is debatable. As defined by Jordan (1991), and Miller and Stiver (1997), mutuality engenders equality in the relationship, which may not be congruent with, or represent, the typical parent-child dyad. In addition, research has suggested that distancing oneself from unhealthy family relationships (e.g. parents) may be an important part of recovery (Hsu et al., 1992; Romney, 1995; Rorty et al., 1993; Weaver et al., 2005).

Therefore, in the absence of further family-relationship assessments (e.g. conflict, emotional expression, or enmeshment), utilizing the construct of PM within this context (i.e. parent-child relationships) may be misleading and findings must be interpreted with caution.

Sanftner, Tantillo, and Seidlitz (2004) extended this initial study to determine whether women with an ED experienced lower PM than women with no ED. Both the ED (n = 35) and control (n = 39) groups completed a measure of PM in a relationship with a friend and of PM in a relationship with a partner. Individuals with EDs reported significantly lower PM in close relationships than controls, with respect to both partner and friend relationships. Furthermore, PM with friends (but not partners) predicted ED diagnosis after controlling for depression. Findings highlighted an interesting pattern of responses with respect to the facets of PM, as measured by the Mutual Psychological Development Questionnaire (MPDQ; Genero et al., 1992b). This measure includes both positively and negatively valenced items to describe relational interactions; the two item subsets were significantly correlated (r = .61, p < .001), suggesting related, yet unique, constructs (Sanftner et al., 2004). Group differences were only significant for scores of total PM and the negatively valenced items; there were no significant differences between the groups on positively valenced items. The authors inferred that "interactions characterized by negative feelings and the perception that the other person is not responding as desired," may be particularly salient for individuals with EDs (Sanftner et al., 2004, p. 95). Reports of interpersonal sensitivity (Aime et al., 2006), high relational conflict among women with EDs (Grissett & Norvell, 1992), and RCT's perspective on disconnection and psychological distress (Miller & Stiver, 1997) all support this hypothesis. Therefore, the degree of disconnection in the relationship may have a more profound impact on the individual than the degree of connection. This suggests a direct link between reports of low social support

satisfaction and perceived support, and lower perceived mutuality in close relationships in this population. Findings must be interpreted with caution however, given the high rates of psychiatric co-morbidity [69% had a diagnosis of Major Depressive Disorder (MDD; DSM-IV-TR, APA, 2000)] and the relatively small sample size (N = 74). In the ED group there were only three participants with a diagnosis of AN. Considering the samples across all studies of PM with clinically diagnosed EDs, there have only been three participants with AN.

2.6.4 Perceived mutuality and social support

Numerous associations among social support, interpersonal functioning, and the EDs have been established by various bodies of research. It has been theorized extensively that PM in close relationships is associated with EDs. However, little empirical research exists and the few published studies that have explored this relationship possess significant limitations and findings have demonstrated modest support at best (Sanftner et al., 2006). Furthermore, existing research demonstrates the complexity of the psychosocial context associated with recovery, suggesting that the experience of social support in general may be influencing the relationship between PM and ED symptom severity. In order to clarify previous findings and understand the broader implications of interpersonal functioning to recovery, research must explore relational dimensions, such as mutuality and social support satisfaction.

2.7 Summary of the problem

Eating disorders are serious mental and physical health concerns resulting in significant medical, psychological, and social consequences. The treatment resistant nature of EDs contributes to protracted course of illness and poor long-term outcomes for many individuals.

Although most research on recovery has focused on symptom-based predictors of change, a growing body of literature has enhanced our understanding of recovery by exploring the patient's perspective (e.g. Cockell et al., 2004; Pettersen & Rosenvinge, 2002). Findings from this research not only emphasize recovery as an ongoing process, they reinforce the importance of the psychosocial dimensions of good health.

RCT provides a strong theoretical context for the investigation of interpersonal functioning in the EDs; it is a framework within which to synthesize existing knowledge and apply new concepts to investigation. Yet, despite its apparent relevance there is little empirical research. Preliminary findings on PM in the EDs support the assertion that relationships characterized by low PM are associated with ED symptoms. However, given the early stages of inquiry and pervasive limitations in the few extant studies, the extent to which these findings may be replicated in a clinical sample including patients with a diagnosis of AN, BN, or EDNOS, has yet to be established. Furthermore, it is not known whether, or how, this dimension of interpersonal functioning relates to one's experience of social support. Given the integral nature of social support to the recovery process, increased examination of the quality and characteristics of the relationships of individuals with EDs may improve understanding of the experience and perception of support. This holds significant implications regarding the enhancement of recovery in this population, and thus, warrants further investigation.

2.8 Purpose of research

Despite the high prevalence of interpersonal challenges in individuals with EDs and the implications this may have for their social support, no research has investigated associations among perceived mutuality in close relationships and social support satisfaction, nor explored

their relationship to readiness for change and ED symptomatology. Thus, the purpose of this research was to examine interpersonal functioning in women with EDs to increase understanding of the psychosocial factors associated with the recovery process. Specifically, based on RCT, I explored the associations between perceived mutuality, social support satisfaction, ED and psychiatric symptomatology (i.e. mental distress), and readiness to make changes to one's ED behaviors.

2.9 Re-statement of objective and research question

The aim of this research was to examine the associations among interpersonal functioning, readiness for change, and ED symptoms in a clinical sample of adult women seeking tertiary care ED treatment. The following research question was addressed: *Is perceived mutuality in a close relationship associated with social support satisfaction, ED and psychiatric symptomatology, and readiness for change?*

3 METHOD

3.1 Context & setting

The current study occurred within the context of an ongoing, large-scale study of social support in the EDs being conducted at the St. Paul's Hospital (SPH) Eating Disorders Program (EDP), the tertiary care treatment facility for adults (≥ 18 years old), in Vancouver, British Columbia, Canada. The large-scale study is funded by a Social Sciences and Humanities Research Council (SSHRC) operating grant awarded to Dr. Josie Geller, Director of Research at the SPH EDP. Dr. Geller's research examines several dimensions of social support: content, delivery, and satisfaction. It employs multiple methods of inquiry, including written vignettes, interviews, and questionnaires, to explore behaviors, beliefs, interpersonal styles and problems, and support satisfaction, from the perspective of the client, friends/partners, and family members (for a full list of study measures not included in the current Thesis project, please refer to Appendix H). The author of this Thesis project, as a research assistant at the SPH EDP, participated in the design of this large-scale study; specifically, she identified the variables and associated measures that would constitute the focus of the current study.

3.2 Design

The current study employed a cross-sectional design to analyze data obtained as part of the aforementioned large-scale study. The current study extended the original research by employing RCT as a framework to examine the associations between a specific interpersonal variable, perceived mutuality in a close relationship, and a specific dimension of social support, satisfaction. Furthermore, the current study examined associations among these psychosocial variables and eating disorder symptomatology and readiness and motivation for change. Given

the dearth of empirical research on perceived mutuality in the EDs, a correlational design enabled the examination of its relationship to ED symptomatology, including both behavioral and cognitive symptoms. In addition, it enabled the exploration of relations among PM, social support satisfaction, and readiness and motivation for change.

3.3 Participants

Participants were 31 adult (≥ 18 years old) women referred to the EDP who met DSM-IV-TR (APA, 2000) criteria for an ED, defined as meeting the Eating Disorder Examination diagnostic criteria (EDE; Cooper & Fairburn, 1987). Data was obtained for all such individuals who consented to the EDP research assessment and who met the following study inclusion criteria. Men were excluded from the current study for the following reasons: (a) RCT, the theoretical framework utilized in this study, emerges from a feminist perspective and research conducted with female populations. It focuses predominantly on the role of relationships in women's lives (Miller & Stiver, 1997); and (b) referrals to the EDP are almost exclusively women (Geller, 2007), due to the higher prevalence of EDs in women and the low rates of reporting symptoms among men (APA, 2000). That said, over the course of the study, there were no males assessed at the EDP. In addition, individuals unable to speak and write the English language were not included in the study, as English language comprehension is necessary to complete the interview and questionnaire package. No other exclusion criteria were applied.

As expected, demographic information was consistent with previous research conducted at the SPH EDP (e.g. Geller, 2007; Geller et al., 2004). Geller (2007) reported the following participant characteristics for all individuals enrolled in research at the SPH EDP between 2003 and 2007 (data obtained at intake): mean age = 27.4 years, mean duration of illness = 10.2 years,

and mean BMI = 19.9, and reported that 90.5% of the sample was Caucasian. In the current study, mean age was 26.23 years, average age of onset was 16.20 years, and average duration of illness was 10.23 years. Over half the sample had received some form of ED treatment in the past, prior to this admission to tertiary care. Mean BMI was 19.72, which falls just under the normal range of 20-25. Approximately half the sample met DSM-IV diagnostic criteria for Anorexia or Bulimia Nervosa; the other half met criteria for EDNOS. The majority of study participants were Caucasian; breakdown for the three cases indicating "other" is as follows one was Arab/West Indian, one was "Latin American," and in one case there was no further specification of Ethnicity. See Table 1 for a complete description of participant demographic information.

Table 1

Description of demographic information (N = 31)

Demographic Information	*n*	%	*M*	*SD*	Range
Age			26.23	7.72	19-50
BMI			19.72	3.61	15.05-27.30
Ethnicity					
Caucasian	26	83.9%			
Arab/West Indian	1	3.2%			
Latin American	1	3.2%			
Other	3	9.7%			
SES			54.66	13.97	23.31-75.87
DSM DX					
An-Bp	4	12.9%			
An-R	2	6.5%			
Bn	9	29.0%			
Ednos	16	51.6%			
Onset			16.20	4.05	8-24
Duration			10.23	8.34	1-36
Treatment					
Yes	20	64.5%			
No	11	35.5%			
Inpatient	8	25.8%			
Outpatient	11	35.5%			

Note. BMI = Body Mass Index, SES = Socioeconomic Status, DSM DX = Diagnostic and Statistical Manual Diagnosis, Ednos DX = Symptom based diagnostic breakdown, Onset = Age of ED onset, Duration = Duration of ED, Treatment = Received past treatment for the ED, Inpatient = Received inpatient treatment, Outpatient = Received outpatient treatment.

3.4 Procedure

As previously stated, the current study utilized cross-sectional data collected as part of the larger study at the SPH EDP. To clarify the context in which this data was originally collected, a description of the SPH EDP research procedure and assessment are provided. In the following description, note that the research assistant identified was not the current author, but a

second student affiliated with the SPH EDP (see Appendix I for a list of research team members and roles).

3.4.1 St. Paul's Hospital Eating Disorder Program research procedure

The EDP has well established referral, intake, and research protocols. At intake (i.e. before having received any treatment or appointments in the EDP) the clinical secretaries schedule individuals for three assessments: 1) Medical, 2) Psychosocial, and 3) Research. The research assessment was both voluntary (i.e. individuals could decline research entirely or withdraw at any time) and completely confidential from treatment providers. As such, the decision to enroll in research had no impact on a woman's future course of treatment and the information obtained in the assessment was not shared with the treatment team (i.e. any and all care providers in the EDP, outside of the research team). This policy ensured participant safety and increased the likelihood of honest responses regarding readiness for treatment and ED symptom severity.

3.4.2 Research assessment

Individuals were notified of their research appointment by the clinical secretaries. The interviews took place in an EDP research assistant's office in the outpatient services area of the EDP. Confidentiality was explained during the informed consent process, at which time the decision to participate was made; if individuals requested additional time to consider enrollment in the study, the research assistant made arrangements to telephone the individual at a later time to discuss further and re-schedule the assessment if necessary. Copies of the informed consent form for Dr. Geller's broader study on social support (see Appendix A), including a description

of the study and contact numbers if participants had further questions, were provided to all participants. Participants completed the Readiness and Motivation Interview (RMI; Geller & Drab, 1999) and typically retained the questionnaire package to complete at home and return via airmail.

3.4.3 Data collection

As per previous research at the SPH EDP, it was anticipated that approximately eight to twelve research assessments would be completed per month. That said, research enrollment remains dependent on referrals to the clinic, assessment schedules, and participant consent. The anticipated sample size was $N = 72$ based on a nine month recruitment period (April 2008-December 2008). However, program enrollment and completion of research protocols declined during the data collection period, limiting the sample for the current study. Previous research conducted at the SPH EDP cites a return rate of approximately 80% (Geller et al., 2007), whereas the return rate during the current study period was approximately 40% (i.e. proportion of questionnaire packages returned by individuals who completed an RMI). Follow-up phone calls were made to individuals who completed the research interview and took the questionnaire package home with them, but did not return it ($n = 35$); unfortunately, a large portion of the group could not be reached ($n = 21$). In many of these cases the research assistant did not leave a message for the individual because their answering machine was not personalized (i.e. no message to ensure confidentiality was maintained).

3.5 Measures

3.5.1 Demographic Information (see Appendix B)

General demographic information was obtained for descriptive purposes, and included: age, weight, height, date of birth, age of eating disorder onset, sex, gender, and ethnicity. In addition, details regarding occupation and financial independence (e.g. self or others providing) were obtained to determine socioeconomic status (SES; Blishen, Carroll, & Moore, 1987).

3.5.2 Mutual Psychological Development Questionnaire (MPDQ; Genero et al., 1992b; Genero, Miller, & Surrey, 1992a; see Appendix C)

The MPDQ was employed to assess perceived mutuality in close adult relationships. To date, it is the only psychometrically validated measure of perceived mutuality in relationships, and thus, has been used to explore associations among mutuality and women's health indices across a variety of clinical and non-clinical populations. Given that perceived mutuality is a central variable in the current investigation, the MPDQ, as the measure of this variable, is presented in detail.

Based on Relational/Cultural Theory, the 22-item self-report measure accesses six dimensions of mutuality: empathy (attunement to another), engagement (interest and responsiveness to another's experience), authenticity (genuine acceptance and understanding of another), empowerment (ability to contribute/impact/influence the relationship or other person in some way), zest (energy and vitality), and diversity (openness to differences and perspectives; Genero et al., 1992b). Each item describes a relational characteristic (e.g. "respect my point of view," "avoid being honest," "be receptive") and participants are asked to rate the extent to which their experiences with a specified other (i.e. in the current study, the closest person in their

life) embody these qualities or interactions. The instructions read, "we would like you to tell us about your relationship with your *partner*," (or *friend*, depending on the version). Participants respond to a subset of the questions (n = 11) from their perspective in the relationship (i.e. self-perspective) and a subset (n = 11) from the perspective of the other person (i.e. other-perspective) in the relationship, a reflection of the bi-directional nature of mutuality. As such, in the first half of the statements the participant refers to her role and behavior in the relationship and in the second half she reflects upon the other person's role and behavior in the relationship (i.e. how she thinks the other person would respond in an interaction). Therefore, the introduction to the first section states, "When we talk about things that matter to (the person to whom they are referring), I am likely to…" and the prompt for the second section states, "When we talk about things that matter to me, my (the person to whom they are referring) is likely to…" Responses range from one to six, denoting: Never, Rarely, Occasionally, More often than not, Most of the time, and All the time. Each subset of items, constituting both self and other perspectives, reflects the elements of mutuality and counterbalances positive and negative content to prevent response sets. Negative items were reverse scored and responses were summed to yield a total score, ranging from 22-132. The total score was then converted to a mean score by dividing the total score (i.e. sum of items) by the total number of items rated (Genero et al., 1992a). A higher mean indicated higher perceived mutuality. Previous research using the MPDQ with an ED population has also reported total scores for the negative item subset and positive item subset, and used these scores in analyses (Sanftner et al., 2004). These authors observed that the two item subsets may represent related yet distinct dimensions of perceived mutuality (Sanftner et al., 2004).

The MPDQ was originally developed with community samples. The two validation studies utilized two forms of the questionnaire to assess PM in relationships with friends and partners, respectively (Genero et al., 1992b). The measure demonstrated very good two-week test-retest reliability (r = .71-.84) and strong internal consistency [(e.g. inter-item reliabilities (Cronbach's α ranging from .89-.94)] for both partner and friend relationship forms and the two perspectives assessed (e.g. item subsets). The two subsets, reflecting self and other perspectives, have comparable means and standard deviations (Genero et al., 1992b). Validity for the friend and partner forms is well established. Construct validity was demonstrated by significant positive correlations with measures of perceived social support (r = .24-.44, p < .001), relationship satisfaction (r = .60-.72, p < .001), and cohesion (r = .42-.75, p < .001), and significant negative correlations with depression scores (r = -.19- -.36, p < .001), in community samples (Genero et al., 1992b). In several multiple regression analyses the authors found that relationship cohesion and satisfaction predicted PM. Moreover, PM in the women's partner relationship predicted depression [$F(2, 182) = 18.4$, p < .001].

For the purposes of the current study, the original measure (Genero et al., 1992b) was adapted to assess participants' relationship with "the *person closest to [them], other than a parent*." Participants were asked to describe their relationship by circling one of: (a) Friend, (b) Partner, (c) Sibling, or (d) Other. The original measures (i.e. friend or partner; Genero et al., 1992b) have been adapted to assess PM in relationships with mothers and fathers, in clinical and community groups of individuals with EDs and sub-threshold disordered eating (Sanftner et al., 2006; Tantillo & Sanftner, 2003) and depression (Powell et al., 1995). In these cases, and in the current study, no content or formatting/structure was altered; adaptation consisted of changing the target relationship to which the participant refers. Sanftner and colleagues (2006) reported

internal consistency estimates (Cronbach's α) of .93 on the mother version, .94 on the father version, and .91 on the friend version, in a sample of college women (including individuals with and without disordered eating). Sanftner, Tantillo, and Seidlitz (2004) reported reliability estimates (Cronbach's α) from a clinical sample of individuals with EDs; alphas were reported for the total item set and each of the subsets of negatively valenced items and positively valenced items, respectively, for partner and friend versions. With respect to the partner version, alphas were as follows: .92 total, .89 positive items, and .86 negative items. With respect to the friend version, alphas were as follows: .89 total items, .88 positive items, and .82 for negative items.

The breakdown for type of relationship referenced by the MPDQ in the current study was as follows: Partner 41.9% (*n* = 13), Friend 29.0% (*n* = 9), Sibling 22.6% (*n* = 7), and Other 3.2% (*n* = 1). The individual who selected Other specified that this person was a casual romantic partner. Participants were also asked to indicate whether the person they identified is aware of the ED. All but one individual reported that the person referenced knows about the ED; in this case, the target relationship was a sibling. Cronbach's alpha for the total MPDQ measure was .88. Cronbach's alphas for the positively and negatively valenced item-subsets were .83 and .86 respectively. Cronbach's alphas for the self and other perspective item-subsets were .82 and .75, respectively. In the current study, MPDQ total scores were used; positive and negative item subset scores were included in the exploratory post-hoc analyses. For full descriptive results for the measure please refer to Appendix L.

3.5.3 Duke-University of North Carolina (UNC) Functional Support Scale (Broadhead, Gehlbach, De Gruy, & Kaplan, 1989; see Appendix D and Appendix E)

The Duke UNC (Duke) was employed to assess social support satisfaction. This brief measure consists of 8 statements loading onto two subscales of perceived emotional support: (a) Confidant support (n = 5; e.g. opportunities to talk about important matters or engage with others) and (b) Affective support (n = 3; e.g. displays of care and love). Individuals responded to the statements using a 5-point scale, where five indicates "as much as I would like," and one indicates "much less than I would like." Participants completed two versions of the Duke, one referring to "global" social support satisfaction and one referring to the "closest person in your life," as previously identified during completion of the MPDQ. The Duke-UNC has demonstrated construct, concurrent, and discriminant validities, and has strong test-retest reliability (Broadhead et al., 1988).

The measure yields a total satisfaction score, obtained by summing the responses to each item. Preliminary review of the data revealed missing data on three Global Duke measures and three Closest Person Duke measures. These questionnaires were all reviewed for patterns of missing data. It appeared that participants deemed certain questions "not applicable" and thus, did not respond. In order to minimize the number of cases excluded from the analyses, a mean support satisfaction score was calculated and used. Both sum and mean scores are presented in Appendix L. Cronbach's alphas for the Global and Closest Person support satisfaction measures were .85 and .86 respectively. For full descriptive results from the measures please refer to Appendix L.

3.5.4 Eating Disorder Inventory-2 (EDI-2; Garner, 1991; see Appendix F)

The EDI-2 was employed to assess ED symptom severity. It is a 91-item self-report questionnaire measure of ED symptomatology, including attitudes and personality features associated with AN and BN. The measure was developed on women meeting diagnostic criteria for an ED at various stages of treatment, but not yet considered recovered. Items are valenced in opposite directions to minimize a response set (e.g. "I think about dieting" versus "I feel satisfied with the shape of my body"). Participants rate items on a 6-point scale, including: Always, Usually, Often, Sometimes, Rarely, and Never. The measure yields total scores for 11 subscales. Previous research examining the factor structure of the EDI-2 has shown that drive for thinness (DT), body dissatisfaction (BD), and bulimia (BN) all load onto the same factor, which taps into symptom severity (Welch, Hall, & Walkey, 1988).

Total subscale scores are generated by adding all the scores for that particular scale. The measure uses a 0-3 scoring scale. Raw scores (i.e. item ratings of 1-6) are converted to a score of 0-3, with the lowest score of 0 corresponding to the responses in the asymptomatic direction, and 3 corresponding to the responses in the symptomatic direction. With the reverse scoring, a positively valenced item such as "I think that my stomach is just the right size," a response of 6 on the questionnaire (indicating Never), would result in a converted score of 3.

The EDI-2 has demonstrated content, concurrent (e.g. established by comparing patient self-reports with those of their healthcare providers), and construct (i.e. convergent and divergent) validities, evidenced by a wide body of research with both clinical and non-clinical populations (see Garner, 1991). Reliability estimates (Cronbach's α) for the first 8 subscales in clinical ED samples, are as follows: Drive for thinness (.83-.86), Bulimia (.86-.88), Body Dissatisfaction (.90-.92), Ineffectiveness (.90-.93), Perfectionism (.80-.85), Interpersonal Distrust

(.84-.85), Interoceptive Awareness (.83), and Maturity Fears (.83-.89; Garner, 1991). Asceticism, Impulse Regulation, and Social Insecurity, were added as provisional subscales in the EDI-2, and estimates of internal consistency are restricted to a non-patient college female comparison group. The composite score for global symptom severity has shown good internal consistency in adult populations (e.g. Geller, Brown, & Srikameswaran, 2009; Welch et al., 1988).

As previously stated, the EDI total score, comprised of the DT, BN, and BD subscales, is thought to be an indicator of overall ED symptom severity and thus, was used in the primary analyses. EDI-2 subscale scores were included in the exploratory post-hoc analyses. Cronbach's alpha co-efficient for the Total symptom severity subscale (i.e. EDI total score) was .90. For full descriptive results from the measure, including Cronbach's alpha co-efficients for symptom subscales, please refer to Appendix L.

3.5.5 Brief Symptom Inventory (BSI; Derogatis, 1993; see Appendix G)

The BSI was employed to assess psychiatric symptoms. It is a 53-item self-report questionnaire and yields nine primary symptom subscales: Somatization (e.g. Feeling weak in parts of your body), Obsessive-Compulsive (e.g. Difficulty making decisions), Interpersonal Sensitivity (e.g. Feeling inferior to others), Depression (e.g. Feeling lonely), Anxiety (e.g. Nervousness or shakiness inside), Hostility (e.g. Feeling easily annoyed or irritated), Phobic Anxiety (e.g. Having to avoid certain things, places, or activities because they frighten you), Paranoid Ideation (e.g. Feeling that most people cannot be trusted), and Psychoticism (e.g. The idea that someone else can control your thoughts), and three indices of global functioning: Global Severity Index (GSI), Positive Symptom Total, and Positive Symptom Distress Index. The BSI has excellent construct validity established by high convergent validity and the results of a structure-comparing factor analysis (Derogatis, 1993).

Participants use a 5-point scale (0-4) to indicate how much a problem has distressed or bothered them during the past seven days (Derogatis, 1993). Raw scores are obtained by summing the item scores for each subscale, then dividing by the number of items endorsed (i.e. if they scored the item a "0" it is not included). The measure generates information at a global, dimensional, and discrete symptom level, and an overall assessment of the individual's current psychological distress (i.e. GSI; average distress experienced across all symptom domains). The GSI has been shown to be the most sensitive indicator of distress level and therefore, was employed as a measure of psychiatric symptomatology in the current study. In addition, given the associations between PM and Depression documented in the literature (Genero et al., 1992; Powell, Denton, & Mattson, 1995; Sperberg & Stabb, 1998), this symptom subscale was also used in follow-up analyses. For full descriptive results from the measure please refer to Appendix L.

3.5.6 Readiness and Motivation Interview (RMI; Geller & Drab, 1999; see Appendix H)

The Readiness and Motivation Interview was conducted to assess readiness to change and to obtain diagnostic information. The RMI is a semi-structured interview assessing readiness and motivation to change ED symptoms. The interviewer embodies a motivational stance (i.e. curious, interested, non-judgmental, no expectation of change) and engages the patient in a collaborative exploration of readiness and motivation. The interview includes both EDE diagnostic questions (see Cooper & Fairburn, 1987) and questions assessing readiness and motivation to change ED symptoms. The symptoms assessed are: Fear of weight gain, Feelings of fatness, Restriction, Weight loss/Maintenance of low weight, Menstruation, Importance of shape, Importance of weight, Objective bulimic episodes, Dietary restriction outside of bulimic

episodes, Vomiting, Laxative use, Diuretic Use, and Excessive exercise (Geller & Drab, 1999). Symptoms are captured by four domains: Cognitive, Restriction, Bingeing, and Compensatory. The interviewer also asks about frequency of symptom occurrence and, in order to further explore ambivalence, whether or not the symptom is a problem for them. Based on the transtheoretical model of behavior change (e.g. stages of change; Prochaska, DiClemente, & Norcross, 1992), patients rate the extent to which they are in Precontemplation (i.e. unaware or unwilling to change/let go of symptoms), Contemplation (i.e. thinking about making changes), or Action/Maintenance (i.e. working to change symptoms or sustain changes attained) for each applicable symptom, as well as the extent to which she is making changes for herself versus for others (i.e. internality). This Internality rating captures locus of control, which has been related to various clinical outcome variables (Geller et al., 2001). Each rating ranges from 0-100%, however, the sum of the 3 stages of change for each symptom must total 100%; internality is independent and ranges from 0-100%. The measure generates global motivation scores (i.e. mean scores for each stage of change) and domain-specific motivation scores (i.e. mean scores for symptoms within that domain).

The RMI has demonstrated good reliability and validity. Inter-rater reliability for the stages of change (i.e. precontemplation, contemplation, and action/maintenance) and internality range from 95.6-97.4%. With respect to internal consistency, coefficient alphas (Cronbach's α) were calculated for stage of change for each of the four symptom domains (i.e. Cognitive, Restriction, Binge, Compensation). Alphas were moderate, reflecting the symptom specific differences in readiness to change, and ranged from .63-.86 (Geller et al., 2001). Similar to the validation study, Cronbach's alpha co-efficients for the current sample were calculated for the

stages of change for each of the symptom domains. Alphas in the current study were as follows: Precontemplation (.82), Contemplation (.22), Action (.69), and Internality (.83).

The RMI has strong convergent and discriminant validity. Global RMI scores were highly correlated with two other well-established measures of change, and were unrelated to measures of age, body mass index, socioeconomic status, or impression management. Furthermore, the RMI has strong criterion validity. Global RMI precontemplation scores predicted anticipated difficulty and completion of recovery activities, decision to enroll in intensive treatment, and treatment drop-out (Geller et al., 2001). Furthermore, previous research has shown that restriction precontemplation (i.e. the extent to which one does not want to change dietary intake and/or gain weight) consistently predicts treatment outcome (e.g. decision to enroll and treatment drop-out; Geller, 2007; Geller et al., 2004). This domain-specific subscale score was used in the analyses. For means and standard deviation scores for the RMI global symptom domains please refer to Appendix L.

3.6 Statistical analyses

3.6.1 Preliminary analyses

Analyses were performed with Statistical Package for the Social Sciences (SPSS) computer software, version 16.0. Prior to analyses the data were screened to detect outliers, missing data, and errors in data entry, and to ensure no violations of pertinent statistical assumptions. Distributions were assessed for normality, linearity, and homoscedasticity, the degree of skewness and kurtosis present, and range and frequencies of scores. Histograms, Normal Q-Q Plots, Detrended Normal Q-Q Plots, and Boxplots were reviewed. Data fulfilled normality assumptions, as indicated by non-significant Kolmogorov-Smirnov statistics.

Moreover, skewness and kurtosis statistics indicated no significant deviations from normality on any of the scores and subscales of interest. For a table of skewness and kurtosis of each variable please see Appendix M.

3.6.2 Descriptive statistics

Cronbach's alpha co-efficients were computed and checked as an indication of the internal consistency and reliability of the measures used in the analyses. Descriptive statistics, including means, standard deviations, and range of scores, and frequencies were reported for all measures, including demographic information (see Appendix L).

3.6.3 Correlations

Pearson product-moment correlations were computed to investigate the study research question: Is perceived mutuality in a close relationship associated with social support satisfaction, ED and psychiatric symptomatology, and readiness for change, in a clinical sample of adult women struggling with an eating disorder?

Specifically, correlations were computed to examine relationships among perceived mutuality in close relationships (MPDQ mean scores), social support satisfaction (Global Duke and Closest Person Duke mean scores), eating disorder (EDI-2 total score) and psychiatric symptomatology (BSI GSI), and readiness and motivation for change (RMI restriction precontemplation scores). Missing data were addressed by excluding cases pairwise from the respective analyses (Pallant, 2007).

3.6.4 Exploratory post-hoc analyses

Results from the primary analyses informed the following exploratory post-hoc analyses; furthermore, previous research in the EDs, clinical implications, and RCT all contributed to the basis for these additional analyses.

These follow-up analyses extended the study's main research question and explored relationships among the facets of perceived mutuality and social support satisfaction, ED symptoms as assessed by the EDI-2 subscales, and psychiatric symptomatology including Depression scores:

(a) Previous research suggests that PM is associated with various attitudinal and personality correlates of eating pathology (Sanftner et al., 2006; Wechsler et al., 2006). Given that primary analyses focused on the EDI total score, comprised of three behavioral indices of symptom severity, follow-up analyses included all EDI-2 subscales in order to assess both behavioral and attitudinal dimensions of ED symptomatology and to get a more comprehensive picture of potential relationships. As such, Pearson product-moment correlations were computed to explore relationships between total perceived mutuality (MPDQ mean scores) and the EDI-2 subscales.

(b) A growing body of theoretical literature and empirical research attests to the relationship between PM and Depression (Genero et al., 1992b; Kaiser et al., 1999; Miller & Stiver, 1997; Powell et al., 1995; Sperberg & Stabb, 1998). Given that primary analyses focused on a global index of mental distress, follow-up analyses examined whether Depression, specifically, was related to PM. A Pearson product-moment correlation was computed to examine the relationship between total perceived mutuality (MPDQ mean scores) and BSI Depression.

(c) Previous research using the MPDQ in a clinical sample of women with EDs suggests that the positively and negatively valenced item-subsets may reflect related yet distinct dimensions of mutuality (Sanftner et al., 2004). In light of this finding, it has been proposed that perceptions of disconnection in one's relationships may be more salient than the sense of connection (Sanftner et al., 2006). As such, Pearson product-moment correlations were computed to explore relationships between the MPDQ positively and negatively valenced item-subsets and social support satisfaction (Global Duke and Closest Person Duke mean scores), ED (EDI-2 total score) and psychiatric symptoms (BSI GSI), and readiness for change (RMI restriction precontemplation scores).

(d) Finally, given the many dimensions of mutuality captured by the MPDQ (i.e. empathy, engagement, authenticity, zest, diversity, and empowerment; Genero et al., 1992b; Jordan, 1991) and the multi-determined nature of social support satisfaction (Geller et al., 2008), item-level analyses were then conducted to see whether certain elements of PM were more salient to support satisfaction. Specifically, Pearson product-moment correlations were computed to explore relationships among the MPDQ individual items and social support satisfaction (Global Duke and Closest Person Duke mean scores).

4 RESULTS

4.1 Descriptive statistics

Means, standard deviations, and Cronbach's alpha co-efficients for eating disorder symptomatology (EDI-2; Garner, 1991), psychiatric symptomatology (BSI; Derogatis, 1993), readiness for change (RMI; Geller & Drab, 1999), social support satisfaction (Global Duke and Closest Person Duke; Broadhead et al., 1988), and perceived mutuality in a close relationship (MPDQ; Genero et al., 1992b) are presented in Table 2. For means, standard deviations, and Cronbach's alpha co-efficients for full measures, please see Appendix L.

Table 2

Means, standard deviations, and reliabilities for eating disorder and psychiatric symptoms, readiness for change, social support satisfaction, and perceived mutuality (N = 31)

Variable	*M*	*SD*	Cronbach's Alpha Co-efficients
EDI-2 Drive for thinness	15.77	5.65	.83
EDI-2 Bulimia	9.23	7.10	.92
EDI-2 Body dissatisfaction	18.06	8.44	.92
Total EDI-2	43.43	15.51	.90
BSI Global Symptom Index (GSI)	1.78	0.86	.97
BSI Depression	2.08	1.05	.89
Restriction Precontemplation	69.03	27.76	
Duke Global Support Satisfaction	3.49	0.94	.85
Duke Closest Person Support Satisfaction	4.05	0.84	.86
MPDQ Total	4.56	0.56	.88
MPDQ Positive item-subset	4.58	0.63	.83
MPDQ Negative item-subset	4.53	0.71	.86

Note. Total EDI-2 = composite score of Drive for Thinness, Bulimia, and Body Dissatisfaction symptom subscales

4.1.1 Eating disorder and psychiatric symptomatology

Means, standard deviations, and reliability estimates for all EDI-2 symptom subscales appeared consistent with those reported for the EDI-2 standardization patient sample (i.e. within one standard deviation; Garner, 1991) and findings obtained in other clinical samples of adult

women (e.g. Sanftner et al., 2006; Tantillo & Sanftner, 2007). Standard deviations for the EDI-2 subscales are quite large, reflecting the heterogeneity among scores on this measure (Garner, 1991). Alphas indicated strong internal consistency for all EDI-2 subscales and the global severity score (EDI total).

The mean BSI GSI score indicates that the current sample falls within the 43rd percentile according to a female outpatient psychiatric patient norm group (Derogatis, 1993). The mean Depression score indicates that the current sample falls within the 54th percentile according to a female outpatient psychiatric patient norm group (Derogatis, 1993). Cronbach's alpha co-efficients for the GSI and Depression subscales indicated strong internal consistency in the current sample.

4.1.2 Readiness for change

The mean restriction precontemplation score was high, suggesting that study participants were not ready to change/increase their dietary intake and/or gain weight. Standard deviations and range of scores endorsed across the four symptom domains and the global readiness domains reveal the sample's heterogeneity and variability in readiness to change. RMI scores are consistent with previous research conducted at the SPH EDP (e.g. Geller, 2007; Geller et al., 2004).

4.1.3 Social support satisfaction

As expected, the Global Duke and Closest Person Duke social support satisfaction scores were significantly correlated ($r = .41$, $p < .05$). The positively and negatively valenced item-subsets were significantly correlated ($r = .78$, $p < .001$). Scores on both measures indicate that

respondents were satisfied with support received, and as expected, mean scores for the Closest Person Duke were slightly higher. On both measures, scores appeared to cluster at the high end of the distribution. The measure has been used in previous research at the SPH EDP and results seem comparable to those previously reported by this group (Geller et al., 2008). I was unable to locate any additional studies using the Duke in ED populations, and therefore, comparison data are limited.

4.1.4 Perceived mutuality in a close relationship

MPDQ total scores were quite high for this group and appeared slightly higher than the mean scores obtained by Sanftner and colleagues (2006) for total PM and both positively and negatively valenced item-subsets. The MPDQ median score was high (4.62) and standard deviation low (.56); scores appeared to cluster at the high end of the distribution. Positively and negatively valenced item-subsets were significantly related ($r = .78$, $p < .001$), as were the self and other item-subsets ($r = .698$, $p < .001$). With respect to the two perspectives assessed, study participants rated themselves as the more mutual partner.

4.2 Correlations

Pearson product-moment correlations were computed to address the study's main research question: *Is perceived mutuality in a close relationship associated with social support satisfaction, ED and psychiatric symptomatology, and readiness for change, in a clinical sample of adult women struggling with an eating disorder?* Consistent with Relational/Cultural Theory, it was hypothesized that PM would be positively correlated with social support satisfaction, and

that these two psychosocial variables would be inversely related to ED and psychiatric symptomatology and restriction precontemplation scores.

Overall, results did not support any of the hypothesized relationships. Pearson product-moment correlations for all variables are presented below in Table 3. A bi-variate correlation was computed to examine the relationship between Perceived Mutuality and social support satisfaction. Results revealed that PM was unrelated to both measures of social support satisfaction. Bi-variate correlations were computed to examine the relationships between these two psychosocial variables, respectively, and ED and psychiatric symptomatology. Results revealed that neither PM or social support satisfaction was associated with either ED or psychiatric symptomatology. Bi-variate correlations were computed to examine the relationships between these two psychosocial variables and readiness for change. Results revealed that neither PM or social support satisfaction was associated with readiness for change.

Table 3

Pearson product-moment correlations for perceived mutuality, social support satisfaction, eating disorder and psychiatric symptomatology, and readiness for change (N = 31)

	1	2	3	4	5	6
1. Perceived Mutuality	-	.08	.27	-.07	-.09	.07
2. Global Social Support Satisfaction	.08	-	.41*	-.15	-.23	-.04
3. Closest Person Social Support Satisfaction	.27	.41*	-	.09	-.00	.21
4. Total Eating Disorder Symptoms	-.07	-.15	.09	-	.66**	.51**
5. Psychiatric Symptoms	-.09	-.23	-.00	.66**	-	.30
6. Readiness for Change	.07	-.04	.21	.51**	.30	-

Note. Perceived Mutuality = MPDQ total scores, Global Social Support Satisfaction = Global Duke, Closest Person Social Support Satisfaction = Closest Person Duke, Total Eating Disorder Symptoms = EDI-2 total score, Psychiatric Symptoms = BSI Global Severity Index, Readiness for Change= RMI restriction precontemplation.
* $p < .05$, ** $p < .01$ (2 tailed test)

4.3 Exploratory post-hoc analyses

Results of the primary correlational analyses did not support the study hypotheses. This was surprising given the strong theoretical and empirical basis for the hypotheses. Several relationships emerged from the follow-up analyses, however all findings must be interpreted with caution because detection of significant relationships may have occurred due to chance.

4.3.1 Perceived mutuality and eating disorder symptoms

Bi-variate correlations were computed to examine relationships between PM and the EDI-2 symptom subscales: Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Ascetism, Impulse Regulation, and Social Insecurity. Results revealed that PM was significantly correlated with two of the 10 EDI-2 subscales, Interpersonal

Distrust (r = -.47, p < .01) and Impulse Regulation (r = -.49, p < .01). With respect to the non-significant results, relationships with Bulimia (r = -.33) and Social Insecurity (r = -.32) approached significance. None of the other correlations exceeded r = -.16.

4.3.2 Perceived mutuality and depression

A bi-variate correlation was computed to examine the relationship between PM and Depression. Results revealed that PM and Depression were unrelated (r = -.04).

4.3.3 Facets of perceived mutuality: positively and negatively valenced item-subsets

Bi-variate correlations were computed to examine relationships between MPDQ positively and negatively valenced item-subsets and social support satisfaction (Global Duke or Closest Person Duke), ED (EDI-2 total score) and psychiatric symptoms (BSI GSI), and readiness for change (RMI restriction precontemplation). Results revealed no significant associations between either of the item-subsets and social support satisfaction, ED and psychiatric symptomatology, or readiness for change. The correlation between the negative item-subset and psychiatric symptoms approached significance (r = .31) but no other correlations between either of the subsets and variables exceeded r = .24.

4.3.4 Facets of perceived mutuality: associations with social support satisfaction

Item-level analyses extended the exploration of PM and social support satisfaction. Specifically, bi-variate correlations were computed to examine relationships between the individual items on the MPDQ and social support satisfaction. Results revealed that Global support satisfaction was significantly correlated with the item "*when we talk about things that*

matter to [this person], I am likely to…'feel moved'" (r = .36, p < .05). There were no other significant correlations between MPDQ items and Global support satisfaction and none of these other correlations exceeded r = .26. Results revealed that Closest Person support satisfaction was associated with several MPDQ items. Specifically, satisfaction was positively correlated with "*when we talk about things that matter to me, [this person]is likely to…'show an interest*'" (r = .44, p < .013), and negatively correlated with both, "*when we talk about things that matter to me, [this person]is likely to…'keep feelings inside*'" (r = -.36, p < .05) and "*change the subject*" (r = -.49, p < .01). The correlation between satisfaction and "*when we talk about things that matter to me, [this person]is likely to…'pick up on my feelings*'" approached significance (r = .35) but no other correlations exceeded r = .30.

5 DISCUSSION

Relational/Cultural Theory posits that chronic disconnection in one's relationships, such as empathic failings and a lack of validation, renders an individual vulnerable to psychological distress, such as the development and maintenance of an ED (Kaplan, 1986; Miller & Stiver, 1997). Given this model, RCT proposes that recovery from an ED occurs within the context of mutually empathic relationships; mutuality is thought to increase self-esteem, affirm relational capacities, influence one's overall social connections and support, and therefore foster healing (Miller & Stiver, 1997; Sanftner et al., 2004; Tantillo, 1998, 2004).

Using RCT as a framework, the present study explored relationships among perceived mutuality in a close relationship, social support satisfaction, ED and psychiatric symptoms, and readiness for change. Consistent with RCT and existing research on social support, interpersonal functioning, and recovery in the EDs, it was hypothesized that PM and social support satisfaction would be related, and that these two psychosocial variables would be associated with lower ED symptoms and higher readiness for change. However, unexpectedly, results did not support any of these predicted relationships; high perceived mutuality and social support satisfaction were not associated, and both were unrelated to overall symptom severity and making changes to one's ED. The study's failure to generate expected results may be due to the small sample size. Alternately, these constructs, as assessed by the measures employed in the current study, may in fact not be associated to the degree that was initially hypothesized. Finally, findings may also reflect the early stages of research in this area, and thus, speak to the need for further studies to clarify if and how these interpersonal processes, and interpersonal functioning in general, are related to recovery from an ED.

5.1 Perceived mutuality and social support satisfaction in the eating disorders

The finding that perceived mutuality in a close relationship and social support satisfaction were unrelated was unexpected. In particular, the finding that PM and support satisfaction from one's closest relationship were not correlated was very surprising. It appears that for study participants, experiencing high mutuality in a close relationship is not associated with the extent to which one is satisfied with support received, either globally or in a close relationship. This finding seems inconsistent with RCT, which posits that mutuality in one's relationship(s) energizes the individual, affirms relational capacities, and increases social connections, and thus, available social support. Indeed, Genero and colleagues (1992b) found that PM was related to social support adequacy (i.e. social network functioning) in a group of healthy individuals in the community. In contrast however, research with a large group (N = 176) of individuals struggling with severe mental illness (i.e. DSM-IV Axis I and II disorders) found that mutuality in one's social network was unrelated to the size of this network (Corrigan & Phelan, 2004). These mixed findings suggest that mutuality may hold different meaning depending on overall level of mental distress; furthermore, the measure employed to assess mutuality may play a significant role in outcomes, and thus, understanding of how this construct operates in different populations. The current study measured *satisfaction* with support received, and thus, a different aspect of social support than assessed in prior studies. Although RCT posits that mutuality in one's relationships influences overall social support (e.g. Miller & Stiver, 1997), the results of this first attempt to explore PM and social support satisfaction in the EDs suggest that the various components of social support must be considered when examining the role of PM to social context.

Considered within the context of RCT, it remains surprising that high PM was not associated with social support satisfaction, especially in regard to support received from the

closest person; as such, further consideration of this finding is due. One may speculate that despite receiving support in the context of a mutual relationship, the individual may not conceive of this type of relational process as one of *social support* per say. Despite conceptual similarities between emotional support and mutuality, and thus, inferred similarities between the measures employed to assess these constructs, the Duke and the MPDQ (e.g. items on both measures consist of opportunities to be heard and many are emotion-focused), findings suggest that they represent distinct and unrelated aspects of one's social experience.

The quality of one's close relationship, specifically, the extent to which it is equal and reciprocal, may not influence overall experience of support, or even reflect the nature of support being received (see Corrigan & Phelan, 2004). It is possible that the dyadic relationship and process measured by the MPDQ both fulfills and represents different relational needs and relational qualities, than what was captured in the study's assessment of social support satisfaction. For example, a highly mutual relationship may improve self-concept and self-worth (Jordan, 1991; Kayser et al., 1999; Genero et al., 1992b), but not necessarily impact one's feelings about social relationships and the support they can afford, given that support is often conceived as reception. Such conceptual differences may account in part, for the lack of relationships, especially with respect to PM and satisfaction with support received from one's closest relationship. Alternately, it is possible that negative interactions in one's relationships are more influential than positive interactions (Sanftner et al., 2004). Indeed, overall degree of interpersonal problems and a non-affilitative interpersonal style have been related to lower support satisfaction (Geller et al., 2008).

In light of the multifaceted nature of mutuality (i.e. MPDQ dimensions of empathy, engagement, authenticity, zest, diversity, and empowerment; Genero et al., 1992b; Jordan, 1991)

and the multi-determined nature of social support satisfaction (Geller et al., 2008), post-hoc analyses explored whether certain elements of PM were more salient to support satisfaction. While it must be noted however that the significant correlations may be due to chance, an interesting, yet tentative, pattern of results emerged with respect to the MPDQ items and satisfaction with support received from one's closest relationship (i.e. Closest Person Duke). The facets of mutuality associated with satisfaction were all from the *other person perspective* item-subset, that is, they were all reflections of how the other person behaves in the relationship. This finding corresponds to a study by Geller and colleagues' (2009) that found that perceptions of support attempts (e.g. concerned, encouraging, directive, unsolicited opinion) made by significant others (e.g. friends, family, partners) were related to Global support satisfaction. Although purely exploratory, results from these analyses suggest that the various aspects of PM may play different roles in one's experience of social support and satisfaction with support attempts; further investigation of this hypothesis with a larger sample seems warranted.

Results revealed that study participants experienced relatively high levels of PM in their relationships. Mean scores in the current study were higher than those reported by other clinical samples of adult women with EDs (Sanftner et al., 2004; 2006) and by healthy female college students (Sperberg & Stabb, 1998; Wechsler et al., 2006). One explanation for these differences is that the few studies exploring PM in the EDs have examined relationships with mother, father, partner, and friend; in these studies mutuality in relationships with parents is consistently lower than in relationships with partners and friends (Sanftner et al., 2006; Wechsler et al., 2006). In the current study, 22 of the relationships assessed referred to partners and friends, and it is possible that exclusion of PM in parental relationships may have influenced this outcome.

Reports of highly mutual relationships in this study stand in contrast with a large body of research describing the interpersonal challenges often faced by this population. Such studies suggest that individuals struggling with an ED possess less social competence (i.e. high degree of discomfort in various social situations), experience higher conflict in relationships, and are less likely to form close relationships than non-ED individuals (Grisset & Norvell, 1992); and feel less able to negotiate conflict in relationships (Bloks et al., 2001; Neckowitz & Morrison, 1991). However, type of relationship and context are likely factors in the experience of interpersonal effectiveness and the quality of one's relationships. As such, it is possible that high PM in the current study, hence, reports of interpersonal effectiveness, is related to the designation of *closest person* as the target relationship being explored. Within the context of a close dyad the individual may feel the safety required for self-expression, feel that she is valued by another, and trust that her voice will be heard (Jordan, 1991); the nature of this close dyad may indeed be a factor contributing to this seemingly inconsistent finding. Feeling effective in one's relationships has been viewed as especially important for women struggling with illness; given that other areas of functioning and quality of life are often compromised, feeling a sense of empowerment and contribution in ones relationships fosters well-being (Kayser et al., 1999).

The study's moderate to high support satisfaction scores (e.g. Global and Closest Person Duke, respectively) are also inconsistent with the literature, which consistently reports that individuals struggling with an ED are dissatisfied with support (Aime et al., 1996; Grisset & Norvel, 1992; Rorty et al., 1999; Tiller et al., 1997). Therefore, consideration of how support satisfaction is being operationalized may be revealing. It has been argued that inconsistencies in definition, conceptualization, and assessment of social support limit understanding of the factors constituting effective support (Broadhead et al., 1988), a perspective substantiated by the diverse

measures of social support employed in the ED literature. Studies reporting low satisfaction have indeed measured multiple dimensions of support, including practical/functional, emotional, and quantity, and employed a variety of different measures. This heterogeneity may have obscured identification of the specific qualities and mechanisms most related to satisfaction for individuals with EDs. For example, a measure's focus on quantity of support as an indicator of satisfaction could generate a different finding than a measure focused on emotional support as an indicator, as does the Duke. Indeed, the high support satisfaction scores in this study may be a function of the measure used. Given the Duke's assessment of emotional support and primary item focus on opportunities to talk and displays of affection, high scores on this measure are consistent with the research attesting to the importance of emotional support and understanding to women's healing processes and overall health (Miller & Stiver, 1997; Surrey, 1991b; Walker, 2004). In sum, results from the present study suggest that emotional support may be particularly helpful for those struggling with an ED and contribute to overall satisfaction, especially in the context of close relationships.

It is also worth mention that reports of high PM and support satisfaction by study participants may be a reflection of social desirability response bias. The difficulty of identifying negative and unsatisfactory elements of one's relationships has been considered by both Genero and colleagues (1992b) and Sanftner and colleagues (2006), in interpretations of their study findings. Indeed, given RCT's assertion of the importance of relationships to women's well-being and sense of self, the desire to portray relational functioning and relationship quality in a positive light may have biased responses. Future studies may consider including a measure of social desirability to assess and control for this potential bias, and perhaps explore similarities

and difference in support providers and loved ones' perceptions of mutuality in their relationship with the eating disordered individual.

Finally, the relational experiences evidenced in the current study may reflect sample specific characteristics. Many studies of social support have been conducted with inpatient samples, which may account for lower overall satisfaction, given the disconnecting nature of hospitalization or residential treatment (Offord, Turner, & Cooper, 2006). In addition, individuals who completed study questionnaires may have differed from those who did not, with respect to overall experience of social support. As previously stated, the questionnaire return rate was 40%, and individuals struggling to obtain support or feeling isolated may have been deterred from the study; exclusion of this subset of individuals may have influenced the study outcomes. Although such hypotheses cannot be substantiated at present, further investigation of sample bias in research enrollment and completion in this population may offer clarification and improve future retention.

5.1.1 Eating disorder symptomatology

Consistent with RCT's perspective of recovery from an ED, the current study hypothesized that one's social context, specifically degree of mutuality in a close relationship and satisfaction with support, would be related to ED symptoms and readiness for change. However, study findings revealed no relationships among these variables.

Failure to detect a significant relationship between PM and global ED symptom severity appears comparable to findings from the few studies exploring PM in the EDs; these studies have reported modest results regarding the relationship of PM to ED behaviors (Sanftner et al., 2006; Tantillo & Sanftner, 2003, 2007). These studies have utilized the EDI-2 (Garner, 1991) as the

measure of ED symptoms, but have not employed a global symptom severity score in analyses, preventing direct comparison with the present findings. However, overall, research with both clinical and non-clinical samples suggests that PM may be associated with attitudinal and personality correlates of eating pathology to a greater extent than with the behavioral symptoms (Sanftner et al., 2006; Wechsler et al., 2006). Results of the exploratory post-hoc analyses revealed a similar pattern to prior studies, however, as previously stated, significant results may be due to chance and caution with interpretation is due. Findings revealed that PM was inversely related to Interpersonal Distrust and Impulse Regulation. The inverse relationship between PM and Interpersonal Distrust seems intuitive, given that mutuality necessitates interpersonal trust. With respect to the inverse relationship between PM and Impulse Regulation, a trait associated with bulimic symptoms (see Vitousek and Manke, 1994), it's possible that difficulties with self-regulation lead to interpersonal challenges. Indeed, in their study of bulimic individuals, Grisset and Norvel (1992) found that this group was less likely to form close relationships, experienced higher relational conflict, and exhibited less social competence than non-ED controls. Taken together, these findings suggest that connections among PM and ED symptomatology may be best conceptualized and understood within the context of interpersonal functioning and further research is needed to increase understanding of potential associations between mutuality and eating disordered behaviors.

Social support satisfaction was also unrelated to ED symptom severity, a surprising outcome given the body of literature describing the patient's perspective of recovery. This research deems social support integral to improved health (Nilsson & Hagglof, 2006; Rorty et al., 1993) and sustained recovery (Cockell et al., 2004). It's possible that the current study's focus on *satisfaction* may have been too narrow to detect relationships among ED symptoms and

social support. One's social context and support experiences are multi-faceted and determined, and amount, delivery, and/or type of support may be associated with recovery. Upon examination of the existing literature of social support and recovery in the EDs it is apparent that the most salient components of social support, with respect to fostering recovery, remain unidentified and undefined. The qualitative literature has focused on general factors promoting recovery, and little work has examined factors specific to social support and interpersonal experiences (Nilsson & Hagglof, 2006; Pettersen & Rosenvinge, 2002; Rorty et al., 1993) and quantitative studies have focused primarily on experiences of social support between groups (i.e. recovery-based outcomes such as ill, remission, recovered) rather than on association with symptom severity (Grisset & Norvel, 1992; Rorty et al., 1999; Tiller et al., 1997). Despite the evident need for further research in this area, results from the current study speak to the role of support satisfaction, and they do not support the notion that this particular dimension of support is related to ED symptoms.

5.1.2 Psychiatric symptomatology

Extensive literature and a growing body of empirical research support associations between mutuality in relationships and mental distress (e.g. Kaplan, 1991; Powell et al., 1995). As such, it was unexpected that PM was unrelated to global mental distress in the current sample. Moreover, in light of RCT, it was also surprising that support satisfaction scores were not related to GSI. Indeed, previous research at the SPH EDP has found that Global support satisfaction is negatively related to global distress (GSI; Geller et al., 2008); it is possible that sample size affected the current study's outcome.

Global severity index (GSI; Derogatis, 1993) was employed in the current study to assess psychiatric symptomatology given that it is the most sensitive indicator of distress level (Derogatis, 1993). However, in light of research attesting to the relationship between PM and depression (Genero et al., 1992b; Kaiser et al., 1999; Miller & Stiver, 1997; Powell et al., 1995; Sperberg & Stabb, 1998), follow-up analyses focused on this specific symptom domain. The finding that PM and depression were unrelated was equally as unexpected as the initial result. Taken together, these findings question the application of RCT's tenets within this particular population. The experience of concurrent mental health concerns, specifically an ED and depressive symptoms within a clinical population, is complex and multi-determined, and therefore may not fit within RCT's framework. As noted throughout this discussion, caution is due when interpreting these findings due to the possibility of chance outcomes, small sample size, and potential influence of sample specific characteristics.

5.1.3 Recovery in the eating disorders: readiness for change

In the current study, readiness for change, specifically, the extent to which one is ready to decrease restriction and/or gain weight (i.e. restriction precontemplation), was employed alongside ED symptom severity to assess recovery. To date, no other research has explored relationships among PM, social support satisfaction, and readiness for change in the EDs; it was hypothesized that these psychosocial variables would be positively related to readiness for change. Results did not support this hypothesis however, and neither PM or social support satisfaction were related to readiness.

The current findings suggest that mechanisms fostering shifts in readiness to change ED behaviors may not be directly related to mutuality in relationships or social support satisfaction.

RCT postulates that recovery from an ED occurs within the context of mutual relationships and that mutuality increases social connections (Jordan, 1991; Miller & Stiver, 1997). Positive interpersonal experiences may indeed offer a social context conducive to recovery, hence, within which change becomes possible, important, and achievable, however, their relationship to readiness and recovery may be moderated or mediated by other factors. For example, given that PM is thought to ameliorate self-esteem (Jordan, 1991) and that self-esteem has been associated with shifts in readiness (Brown et al., 2004), it is possible that this third variable plays a role. Specifically, self-esteem may increase as a result of high mutuality and support, and thus, foster recovery efforts, leading to lower symptoms and higher readiness for change.

Another possible explanation exists for this finding. This consideration pertains to the measures employed to assess the psychosocial variables and readiness for change. The Duke and the MPDQ ask respondents to comment on their social support and relationship, respectively, without a timeframe within which to contemplate these interactions. The RMI however assesses readiness and motivation during the two weeks prior; in addition, this is made explicit by the interviewer (Geller & Drab, 1999). Therefore, given the fluctuations that occur in readiness, this parameter may have influenced the detection of relationships among these variables. For example, it is possible that more long-term experiences of mutuality in one's relationship (i.e. beyond the two weeks included in the RMI) and social support satisfaction fostered readiness and motivation to seek treatment (i.e. decision to attend treatment may reflect higher readiness, in context of mutual and supportive relationships). However, due to the RMI's structure (i.e. focus on 2 weeks prior to interview), this relationship would not have been captured. Given the emotion and stress associated with admission to treatment, it is not uncommon for individuals to

experience heightened ambivalence regarding change at this time point (Geller, 2007), and this may occur regardless of social and interpersonal influences.

5.2 Implications

The study's results have implications for theory, research, and clinical work in the field of counselling psychology.

5.2.1 Theoretical implications

This study was formulated and designed within the context of Relational/Cultural Theory's model of psychological health, which emphasizes the importance of women's relationships to well-being. The model posits that disconnection and connection in one's relationships are associated with mental distress, well-being, and healing (see Jordan, 1991; Miller & Stiver, 1997; Surrey, 1991b). An extensive body of theoretical literature has described this model and applied it to various women's health contexts and populations, and there is indeed substantial support in many cases. However, despite the generalization of theoretical principles, little empirical research has been conducted to examine the "fit" of this model with specific populations. Distinction between clinical and non-clinical populations may be necessary. There are virtually no studies investigating the role of perceived mutuality, the core construct of RCT, in clinical populations of individuals struggling with an ED, and results from prior studies offer modest support, at best, for the application of RCT (Sanftner et al., 2006; Tantillo & Sanftner, 2003; 2007). Results from the current study, although limited in their generalizability due to the nature of the sample, suggest that RCT's perspective regarding mental health is not as readily generalizable to clinical contexts as implied in the literature, and thus, may not constitute a valid

framework within which to conceptualize recovery from an ED. Specifically, findings were inconsistent with the notion that recovery from an ED occurs within the context of mutual relationships. Further empirical research is needed to determine whether, and/or how, the experiences of adult women with clinically diagnosed eating disorders can be understood within the context of Relational/Cultural Theory.

5.2.2 Clinical implications

Eating disorders are a prevalent health concern affecting many women today. Given the widespread nature of EDs, counsellors across settings will likely encounter a client experiencing difficulty with food, shape, and weight. Despite being conducted with a clinical sample seeking specialized care, results have implications for counsellors working in the community, given that symptom severity does not necessarily determine the level of treatment an individual seeks. Results suggest that it may be useful to explore clients' perceptions of support attempts offered by important others in their lives, especially those with whom they feel they have a very close relationship. It appears that the extent to which one feels heard and validated in a close relationships is related to how satisfied one is with support received from that relationship. Furthermore, obtaining emotional support seems to be particularly important in determining overall support satisfaction. Again, this speaks to the importance of feeling heard and cared for. In light of these findings, counsellors may work with both clients and their care providers to foster supportive relationships that are conducive to both mutuality and support satisfaction.

5.2.3 Implications for research: future directions

Considered together, research exploring social support, interpersonal functioning, and recovery in the EDs, writings on RCT, and clinical observations provide strong justification for further inquiry into the role of interpersonal and social experiences in recovery from an ED.

Results from the study's exploratory post-hoc analyses highlighted several potentially informative areas worth further investigation. Comparison of PM and outcomes across friend, partner, and sibling relationships was not possible in the current study due to small sample size. However, given that previous research has demonstrated differences in the experience of mutuality across relationships, and subsequent ED related outcomes (Tantillo & Sanftner, 2003; 2007), this may be an important avenue to pursue. Moreover, given the bi-directional nature of interpersonal functioning and social support, it may be interesting to also assess partner, friend, or sibling PM. Potential differences in reports may highlight points of disconnect or connection in the relationship, and their consequences. Hypothetically speaking, this may also inform our understanding of social support in the EDs. Such a comparison would have been revealing in the current study, given the sample's reports of high mutuality, which were somewhat surprising in light of extant research.

Another valuable direction would be to examine differences between self- and other-perceptions of mutuality (i.e. the self- and other-perspective item subsets of the MPDQ, if this measure is employed). This could elucidate whether perceptions of low mutuality from one's partner, specifically, influences outcomes. It may also help clarify whether RCT's notion that disconnection in one's relationships is related to the experience of EDs. Lastly, virtually all study participants (99%) reported that the person with whom they felt closest knew of the ED. This makes sense, however, it raises the question of whether, and/or how, mutuality and support

satisfaction may be different in relationships where the ED is not known. It is unclear whether the ED leads to relational conflict, or whether relational conflict precipitates or sustains the ED (Aime et al., 2006; Grisset & Norvell, 1992; Holt & Espelage, 2002; O'Mahony & Hollwey, 1995), however, it is likely a function of both. As such, it may be revealing to explore whether relationships without this knowledge offer the individual and the other person alternative ways of responding, and whether this is helpful or unhelpful to their recovery process. The author is unaware of any research to date on social support in the EDs that has addressed this issue.

Overall, the current study's findings indicate that further exploration of RCT is necessary to ensure the accurate and informed application of its principles to adult women struggling with an ED. Should this line of inquiry be pursued, qualitative methodologies may render the patient's perspective on relational factors and characteristics that foster mutuality, social support satisfaction, and recovery more accessible. Qualitative inquiry may also generate content for valid measure development for use in this area, given that the MPDQ (Genero et al., 1992b) is the sole measure of this construct to date. With respect to further quantitative studies, a longitudinal design is highly recommended. Given the inherent questions of direction and causality permeating the majority of research on interpersonal functioning and social support in the EDs (e.g. Holt & Espelage, 2002), assessing social context & experiences at multiple time points over the course of treatment and recovery has the potential to clarify these processes. This is particularly relevant to readiness and motivation for change; specifically, it remains unclear whether/how social support needs shift with readiness, or, whether/how PM influences readiness and motivation at different stages of treatment and recovery. Longitudinal research could illuminate the most effective areas for both treatment intervention and psychoeducation for loved

ones, who are likely struggling to support the individual (Brown & Geller, 2006; Treasure et al., 2007).

5.3 Limitations

A key limitation in the current study is the small sample size, and thus, low power in all statistical analyses. Furthermore, the sample was comprised of predominantly Caucasian women of upper middle class socio-economic status, limiting the generalizability of findings. Given the limitations imposed by the small sample and the significance of factors contributing to this outcome, a brief discussion is warranted. As previously reported, both research enrollment and completion were substantially lower during the data collection period than has been seen in the past at the SPH EDP. This overall decline may be attributed to changes in the overall model of service delivery for tertiary care ED treatment or potentially, the research assessment.

A potential reason for the low return rate was the questionnaire package itself. The current study occurred within the context of a larger project exploring social support, being conducted concurrently with two other projects. Consequently, the questionnaire package consisted of a number of measures unrelated to the current study; two measures in particular are thought to have increased research burden and potentially deterred completion (i.e. a long measure on substance use and a questionnaire requesting open-ended responses) due to the amount of time and thought (i.e. for qualitative responses) required for completion.

In addition, several limitations stem from the measure employed to assess perceived mutuality, the MPDQ (Genero et al., 1992b). This measure was developed and validated with a community sample of healthy adults. Its psychometric properties have not been examined with clinical populations, including ED populations. As such, its ability to accurately and validly

measure the construct of PM in this particular population is uncertain. Given the salience of the measure's content and construct to this population, further investigation and validation of the measure is necessary to ensure it's an appropriate assessment for this group.

5.4 Conclusion

To date, there exists a paucity of empirical research examining perceived mutuality in the eating disorders. This study constitutes the first known investigation of both perceived mutuality and social support satisfaction in the EDs. As such, this small study marks an initial step towards increased understanding of the psychosocial correlates of recovery in the EDs, specifically ED symptoms and readiness for change.

Overall, findings in the current study were unexpected, as they were inconsistent with both previous research and the theoretical framework employed. Despite being limited in the extent to which they can be generalized beyond the current population, findings question the application of RCT as a framework within which to consider recovery from an ED.

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APPENDICES

Appendix A: Participant Informed Consent Form

PARTICIPANT INFORMED CONSENT FORM – CLIENT VERSION

Principal Investigator:	**Co-Investigator:**	**Co-Investigator:**
Dr. Josie Geller	**Dr. Suja Srikameswaran**	**Dr. Erin Dunn**
604-682-2344, 62472	**604 682-2344, 62410**	**604-682-2344, 62375**

Understanding social support in the eating disorders:
Client, friend and family factors that contribute to social support satisfaction

You are being invited to participate in this research in order to increase our understanding of social support preferences and experiences in individuals with eating disorders. Participation in this study is entirely voluntary. You may decide to participate or not to participate, or you may withdraw from the study at any time, and these decisions will not affect the care that you receive in any way.

Although family and friends may play an important role in the recovery process, previous research has shown that some individuals with eating disorders perceive the support they receive as inadequate. Little is known about what is found to be helpful and unhelpful by people with eating disorders, and about what other factors may contribute to people's experiences with support.

PURPOSE

The purpose of the research is to increase our understanding of social support from the perspectives of individuals who have eating disorders, their parents and friends, and also from individuals who have received intensive eating disorders treatment. This increased understanding will help us in teaching families and friends about what kind of support is likely to be most helpful for their loved ones, and may in turn reduce the occurrence of unhelpful support.

PROCEDURES

If you agree to participate in this research, you will be invited to meet with the study coordinator to complete a clinical interview and questionnaire package. The interview addresses your health and feelings about recovery and the questionnaire packet addresses mood, self-esteem, interpersonal style, and your thoughts about helpful and unhelpful support from friends and family members. Participation in the interview and completion of the questionnaire packets will require 2 hours of your time. As we are also interested in the perspectives of potential support providers in your life, we will ask you to provide the name and contact information of a friend and/or your mother/stepmother. With your permission, we will mail the individual(s) that you have named a consent form and questionnaire package, and invite them to participate in this research. If they choose to participate, they will be invited to fill out a questionnaire package addressing their thoughts about social support, their own mood, and interpersonal style. In addition, they will be invited to indicate their interest in being contacted by the study coordinator to learn about the possibility of participating in a clinical interview, which also addressed their feelings about helpful and unhelpful social support.

POTENTIAL RISKS / BENEFITS

No direct risks or benefits are anticipated from this research. However, you may find that the interviews help you to clarify your feelings about treatment, recovery, or what you find to be most helpful from you family members and friends. You may however, experience emotional reactions to some of the questions asked. Counseling services will be made available to you should you require them as a result of your participation in this study.

MONETARY COMPENSATION

There will be no monetary compensation for participating in this project.

CONFIDENTIALITY

Any information resulting from this research will be kept confidential. Upon signing the informed consent form, you will be given a code number to ensure the maintenance of confidentiality, and you will not be identified by the use of names or initials. Additionally, at all times, questionnaires will be kept in a locked filing cabinet in a secured office at St. Paul's Hospital, and only the above named individuals will have access to you file.

QUESTIONS ABOUT THE STUDY OR YOUR RIGHTS

You do not waive any legal rights by signing this form. If you have any questions about your rights as a research participant, you may contact the director of Research Services, University of British Columbia at 604-822-8595 or Dr. Ingrid Fedoroff, Chair-UBC/Providence Health Care Research Ethics Board at 604-682-2344, 62325. If you have any questions or concerns at any time during the study, you may contact Dr. Geller, Dr. Srikameswaran, or Krista Brown at the numbers listed above. You will be informed of any significant information that may concern you.

PARTICIPANT'S CONSENT AND SIGNATURES

I have read the above information and I have had an opportunity to ask questions to help me understand what my participation would involve. I freely consent to participate in the study and acknowledge receipt of a copy of the consent form.

_____ _____
Signature of Participant or Legal Representative Name (please print)

Date: _____

_____ _____
Signature of Witness Name (please print)

Date: _____

_____ _____
Signature of Principal Investigator Name (please print)

Date: _____

Thank you for your willingness to participate in this study.

If you would like us to send you a summary of the results of this research, please provide your full name and address:

_____
_____
_____
_____

Appendix B: Demographic Information Sheet

General Information Sheet - Client

*** Please note that all questions are optional.**

Age: _____ Date of Birth (dd/mm/yr): _____
Your height: _____ Your weight: _____
Age at eating disorder onset: _____

Have you received treatment for an eating disorder in the past? YES ☐ NO ☐

If so, please describe what type, and how much you received:_____
_____
_____

Please indicate the **occupation** of your mother, father, yourself, and any other person that has assisted you financially (if applicable). Please also indicate (circle Y or N) which of these individuals is **currently** providing you with financial support.

Mother: _____ Currently provides $$: Y or N
Father: _____ Currently provides $$: Y or N
Self: _____ Currently provides $$: Y or N
Other: _____ Currently provides $$: Y or N

Please describe your ethnic background:

a) _____ Caucasian/White (e.g., European)
b) _____ Chinese
c) _____ South Asian (e.g., East Indian, Pakistani, Punjabi
d) _____ South East Asian (e.g., Cambodian, Indonesian, Vietnamese)
e) _____ Arab/West Asian (e.g., Armenian, Egyptian, Iranian, Lebanese)
f) _____ Other Asian (e.g., Filipino, Japanese, Korean)
g) _____ Latin American (e.g., Mexican, Spanish)
h) _____ Black (e.g., African, Jamaican, Haitian)
i) _____ Other. Please Describe: _____

Birth Sex:	Gender Identity:	Sexual Orientation:
☐ Female	☐ Female	☐ Gay ☐ Bisexual
☐ Male	☐ Male	☐ Lesbian ☐ Straight
	☐ Transgender	☐ Questioning

If your **parent** or **step-parent** is participating in this study, please answer the following questions:

Do you live with your parent/step-parent? Y or N
If not, how long has it been since you lived with your parent /step-parent? _____

Please rate how **close** you are to your **parent/step-parent**:

1	2	3	4	5
a little	somewhat	moderately	very	extremely

How **important** do you think it is to your **parent/step-parent** that you recover from your eating disorder?

1	2	3	4	5
a little	somewhat	moderately	very	extremely

If your **friend/partner** is participating in this study, please answer the following questions:

1. How long have you been friends with this person? _____
2. In the past 4 weeks**,** how much **time** have you spent with this friend? _____
3. Are you currently romantically involved with this friend? Y or N
4. Do you live with your friend/partner? Y or N

Please rate how **close** you are to your **friend/partner**:

1	2	3	4	5
a little	somewhat	moderately	very	extremely

How **important** do you think it is to your **friend/partner** that you recover from your eating disorder?

1	2	3	4	5
a little	somewhat	moderately	very	extremely

Appendix C: Mutual Psychological Development Questionnaire

MPDQ Client Version

We would like you to tell us about your relationship with the *closest person in your life,* who is not a parent. Please describe this relationship by circling one of the following: (a) Friend (b) Partner (c) Sibling (d) Other (please describe):

Please provide the first name and last initial of this person:
Is this person aware that you have an Eating Disorder? Yes No

In this section, we would like to explore certain aspects of your relationship with this person. Using the scale below, please tell us your best estimate of how often you and this person experience each of the following:

When we talk about things that
matter to this person, I am likely to:

	Never	Rarely	Occasionally	More often Than not	Most of the time	All the time
Be receptive	1	2	3	4	5	6
Get impatient	1	2	3	4	5	6
Try to understand	1	2	3	4	5	6
Get bored	1	2	3	4	5	6
Feel moved	1	2	3	4	5	6
Avoid being honest	1	2	3	4	5	6
Be open-minded	1	2	3	4	5	6
Get discouraged	1	2	3	4	5	6
Get involved	1	2	3	4	5	6
Have difficulty listening	1	2	3	4	5	6
Feel energized by our conversation	1	2	3	4	5	6

When we talk about things that
matter to me, this person is likely to:

Pick up on my feelings	1	2	3	4	5	6

Feel as if we're not getting anywhere	1----------2----------3----------4----------5----------6
Show an interest	1----------2----------3----------4----------5----------6
Get frustrated	1----------2----------3----------4----------5----------6
Share similar experiences	1----------2----------3----------4----------5----------6
Keep feelings inside	1----------2----------3----------4----------5----------6
Respect my point of view	1----------2----------3----------4----------5----------6
Change the subject	1----------2----------3----------4----------5----------6
See the humor in things	1----------2----------3----------4----------5----------6
Feel down	1----------2----------3----------4----------5----------6
Express an opinion clearly	1----------2----------3----------4----------5----------6

Appendix D: Duke UNC Functional Support Scale: Global

Duke-UNC Functional Support Scale

Here is a list of things that people do for us or give us that may be helpful or supportive. Please read each statement carefully and circle the number that is closest to your situation. Answer each item as best you can. There are no right or wrong answers.

5 ---------- 4 ---------- 3 ---------- 2 ---------- 1

As much as I would like — **Much less than I would like**

I GET…

1. People who care about what happens to me	5 4 3 2 1
2. Love and affection	5 4 3 2 1
3. Chances to talk to someone about problems at school, work, or my day to day activities	5 4 3 2 1
4. Chances to talk to someone I trust about my personal and family problems	5 4 3 2 1
5. Chances to talk about money matters	5 4 3 2 1
6. Invitations to go out and do things with other people	5 4 3 2 1
7. Useful advice about important things in life	5 4 3 2 1
8. Help when I am sick in bed	5 4 3 2 1

Appendix E: Duke UNC Functional Support Scale: Closest Person

Duke-UNC for Closest Person

Here is a list of things that people do for us or give us that may be helpful or supportive. Please read each statement carefully and circle the number that is closest to your situation. Answer each item as best you can. There are no right or wrong answers.

5 ---------- 4 ---------- 3 ---------- 2 ---------- 1

As much as I would like — **Much less than I would like**

Please indicate the extent to which the closest person in your life, as indicated in the previous questionnaire (labeled MPDQ), provides you with each of the following:

_____PROVIDES…

1. Caring about what happens to me	5 4 3 2 1
2. Love and affection	5 4 3 2 1
3. Chances to talk about problems at school, work, or my day to day activities	5 4 3 2 1
4. Chances to talk to someone I trust about my personal and family problems	5 4 3 2 1
5. Chances to talk about money matters	5 4 3 2 1
6. Invitations to go out and do things with her/him	5 4 3 2 1
7. Useful advice about important things in life	5 4 3 2 1
8. Help when I am sick in bed	5 4 3 2 1

Appendix F: Eating Disorders Inventory-2

Eating Disorders Inventory (EDI-2)

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. Read each question and circle the number of the answer that applies best to you. Please answer each question very carefully. Thank you.

		Always	Usually	Often	Sometimes	Rarely	Never
1	I eat sweets and carbohydrates without feeling nervous	1	2	3	4	5	6
2	I think that my stomach is too big	1	2	3	4	5	6
3	I wish that I could return to the security of childhood	1	2	3	4	5	6
4	I eat when I am upset	1	2	3	4	5	6
5	I stuff myself with food	1	2	3	4	5	6
6	I wish that I could be younger	1	2	3	4	5	6
7	I think about dieting	1	2	3	4	5	6
8	I get frightened when my feelings are too strong	1	2	3	4	5	6
9	I think that my thighs are too large	1	2	3	4	5	6
10	I feel ineffective as a person	1	2	3	4	5	6
11	I feel extremely guilty after overeating	1	2	3	4	5	6
12	I think that my stomach is just about the right size	1	2	3	4	5	6
13	Only outstanding performance is good enough in my family	1	2	3	4	5	6
14	The happiest time in life is when you are a child	1	2	3	4	5	6
15	I am open about my feelings	1	2	3	4	5	6
16	I am terrified of gaining weight	1	2	3	4	5	6
17	I trust others	1	2	3	4	5	6
18	I feel alone in the world	1	2	3	4	5	6
19	I feel satisfied with the shape of my body	1	2	3	4	5	6
20	I feel generally in control of things in my life	1	2	3	4	5	6
21	I get confused about what emotion I am feeling	1	2	3	4	5	6
22	I would rather be an adult than a child	1	2	3	4	5	6
23	I can communicate with others easily	1	2	3	4	5	6
24	I wish I were someone else	1	2	3	4	5	6
25	I exaggerate or magnify the importance of weight	1	2	3	4	5	6
26	I can clearly identify what emotion I am feeling	1	2	3	4	5	6
27	I feel inadequate	1	2	3	4	5	6
28	I have gone on eating binges where I felt that I could not stop	1	2	3	4	5	6

29	As a child, I tried very hard to avoid disappointing my parents and teachers	1	2	3	4	5	6
30	I have close relationships	1	2	3	4	5	6
		Always	Usually	Often	Sometimes	Rarely	Never
31	I like the shape of my buttocks	1	2	3	4	5	6
32	I am preoccupied with the desire to be thinner	1	2	3	4	5	6
33	I don't know what is going on inside me	1	2	3	4	5	6
34	I have trouble expressing my emotions to others	1	2	3	4	5	6
35	The demands of adulthood are too great	1	2	3	4	5	6
36	I hate being less than best at things	1	2	3	4	5	6
37	I feel secure about myself	1	2	3	4	5	6
38	I think about bingeing (overeating)	1	2	3	4	5	6
39	I feel happy I am not a child anymore	1	2	3	4	5	6
40	I get confused as to whether or not I am hungry	1	2	3	4	5	6
41	I have a low opinion of myself	1	2	3	4	5	6
42	I feel I can achieve my standards	1	2	3	4	5	6
43	My parents have expected excellence of me	1	2	3	4	5	6
44	I worry that my feelings will get out of control	1	2	3	4	5	6
45	I think my hips are too large	1	2	3	4	5	6
46	I eat moderately in front of others and stuff myself when they're gone	1	2	3	4	5	6
47	I feel bloated after eating a normal meal	1	2	3	4	5	6
48	I feel that people are happiest when they are children	1	2	3	4	5	6
49	If I gain a pound, I worry that I will keep gaining	1	2	3	4	5	6
50	I feel that I am worthwhile person	1	2	3	4	5	6
51	When I am upset, I don't know if I am sad, frightened, or angry	1	2	3	4	5	6
52	I feel that I must do things perfectly, or not do them at all	1	2	3	4	5	6
53	I have the thought of trying to vomit in order to lose weight	1	2	3	4	5	6
54	I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close)	1	2	3	4	5	6
55	I think that my thighs are just the right size	1	2	3	4	5	6
56	I feel empty inside (emotionally)	1	2	3	4	5	6
57	I can talk about personal thoughts and feelings	1	2	3	4	5	6
58	The best years of your life are when you become an adult	1	2	3	4	5	6
59	I think my buttocks are too large	1	2	3	4	5	6
60	I have feelings that I can't quite identify	1	2	3	4	5	6
61	I eat or drink in secrecy	1	2	3	4	5	6
62	I think that my hips are just the right size	1	2	3	4	5	6
63	I have extremely high goals	1	2	3	4	5	6

64	When I am upset, I worry that I will start eating	1	2	3	4	5	6
65	People I really like end up disappointing me	1	2	3	4	5	6
66	I am ashamed of my human weaknesses	1	2	3	4	5	6
		Always	Usually	Often	Sometimes	Rarely	Never
67	Other people would say that I am emotionally unstable	1	2	3	4	5	6
68	I would like to be in total control of my bodily urges	1	2	3	4	5	6
69	I feel relaxed in most group situations	1	2	3	4	5	6
70	I say things impulsively that I regret having said	1	2	3	4	5	6
71	I go out of my way to experience pleasure	1	2	3	4	5	6
72	I have to be careful of my tendency to abuse drugs	1	2	3	4	5	6
73	I am outgoing with most people	1	2	3	4	5	6
74	I feel trapped in relationships	1	2	3	4	5	6
75	Self-denial makes me feel stronger spiritually	1	2	3	4	5	6
76	People understand my real problems	1	2	3	4	5	6
77	I can’t get strange thoughts out of my head	1	2	3	4	5	6
78	Eating for pleasure is a sign of moral weakness	1	2	3	4	5	6
79	I am prone to outbursts of anger or rage	1	2	3	4	5	6
80	I feel that people give me the credit I deserve	1	2	3	4	5	6
81	I have to be careful of my tendency to abuse alcohol	1	2	3	4	5	6
82	I believe that relaxing is simply a waste of time	1	2	3	4	5	6
83	Others would say that I get irritated easily	1	2	3	4	5	6
84	I feel like I am losing out everywhere	1	2	3	4	5	6
85	I experience marked mood shifts	1	2	3	4	5	6
86	I am embarrassed by my bodily urges	1	2	3	4	5	6
87	I would rather spend time by myself than with others	1	2	3	4	5	6
88	Suffering makes you a better person	1	2	3	4	5	6
89	I know that people love me	1	2	3	4	5	6
90	I feel like I must hurt myself or others	1	2	3	4	5	6
91	I feel that I really know who I am	1	2	3	4	5	6

Appendix G: Brief Symptom Inventory

Brief Symptom Inventory (BSI)

Below is a list of problems and complaints that people sometimes have. Read each one carefully, and select the answer that best describes HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST TWO WEEKS including today. Then circle that number. Thank you.

		Not at all	A little bit	Moderately	Quite a bit	Extremely
1	Nervousness or shakiness inside	0	1	2	3	4
2	Faintness or dizziness	0	1	2	3	4
3	The idea that someone else can control your mind	0	1	2	3	4
4	Feeling others are to blame for most of your troubles	0	1	2	3	4
5	Trouble remembering things	0	1	2	3	4
6	Feeling easily annoyed or irritated	0	1	2	3	4
7	Pains in heart or chest	0	1	2	3	4
8	Feeling afraid in open spaces	0	1	2	3	4
9	Thoughts of ending your life	0	1	2	3	4
10	Feeling that most people cannot be trusted	0	1	2	3	4
11	Poor appetite	0	1	2	3	4
12	Suddenly scared for no reason	0	1	2	3	4
13	Temper outbursts that you cannot control	0	1	2	3	4
14	Feeling lonely even when you are with people	0	1	2	3	4
15	Feeling blocked in getting things done	0	1	2	3	4
16	Feeling lonely	0	1	2	3	4
17	Feeling blue	0	1	2	3	4
18	Feeling no interest in things	0	1	2	3	4
19	Feeling fearful	0	1	2	3	4
20	Your feelings being easily hurt	0	1	2	3	4
21	Feeling that people are unfriendly or dislike you	0	1	2	3	4
22	Feeling inferior to others	0	1	2	3	4
23	Nausea or upset stomach	0	1	2	3	4
24	Feeling that you are watched or talked about by others	0	1	2	3	4
25	Trouble falling asleep	0	1	2	3	4
26	Having to check and double check what you do	0	1	2	3	4
27	Difficulty making decisions	0	1	2	3	4
28	Feeling afraid to travel on buses, subways or trains	0	1	2	3	4
29	Trouble getting your breath	0	1	2	3	4

30	Hot and cold spells	0	1	2	3	4
31	Having to avoid certain things, places, or activities because they frighten you	0	1	2	3	4
		Not at all	A little bit	Moderately	Quite a bit	Extremely
32	Your mind goes blank	0	1	2	3	4
33	Numbness or tingling in parts of your body	0	1	2	3	4
34	The idea that you should be punished for your sins	0	1	2	3	4
35	Feeling hopeless about the future	0	1	2	3	4
36	Trouble concentrating	0	1	2	3	4
37	Feeling weak in parts of your body	0	1	2	3	4
38	Feeling tense or keyed up	0	1	2	3	4
39	Thoughts of death or dying	0	1	2	3	4
40	Having urges to beat, injure, or harm someone	0	1	2	3	4
41	Having urges to break or smash things	0	1	2	3	4
42	Feeling very self-conscious with others	0	1	2	3	4
43	Feeling uneasy in crowds	0	1	2	3	4
44	Never feeling close to another person	0	1	2	3	4
45	Spells of terror or panic	0	1	2	3	4
46	Getting into frequent arguments	0	1	2	3	4
47	Feeling nervous when you are left alone	0	1	2	3	4
48	Others not giving you proper credit for your achievements	0	1	2	3	4
49	Feeling so nervous you couldn’t sit still	0	1	2	3	4
50	Feelings of worthlessness	0	1	2	3	4
51	Feeling people will take advantage of you if you let them	0	1	2	3	4
52	Feelings of guilt	0	1	2	3	4
53	The idea that something is wrong with your mind	0	1	2	3	4

Appendix H: Readiness and Motivation Interview

EDE/RMI Coding Sheet

Name: _____ **Date: _____**

ID: _____ **Initial Interview** ☐

Notes on General Eating Habits: Have your eating habits varied much from day to day? Have weekdays differed from weekends? Have there been any days when you haven't eaten anything?

Fear of Weight Gain

*** Over the past 4 weeks have you been afraid that you might gain weight or become fat?**

Last 4 Weeks	[ ]	
Month 2	[ ]	Problem: yes no
Month 3	[ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to work on your fear of weight gain?):

Feelings of Fatness

*** Over the past 4 weeks have you felt fat?**

Last 4 Weeks	[ ]	
Month 2	[ ]	Problem: yes no
Month 3	[ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes: (what are you doing to work on reducing feelings of fatness?)

Restraint Over Eating

*** Over the past 4 weeks have you consciously tried to restrict what you eat whether or not you have succeeded? What do you do to restrict? (must be for reasons concerning shape and/or weight).**

Last 4 Weeks [ ]

Month 2	[ ]	Problem: yes no
Month 3	[ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what have you done to restrict? AND what are you doing to not restrict?):

Weight Loss

***What's been going on with your weight over the last year? (establish pattern of gain/loss/maintenance)**

*** Over the past 3 months have you been trying to lose weight?**

If no: **Have you been trying to make sure that you do not gain weight?**

Over Past 3 Months	[ ]	Problem: yes no
Precontemplation	____%	Notes:
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (summary of weight over last year/what are you doing to stop your weight loss?):

Weight Maintenance

(if previous question was answered "NO")

Over Past 3 Months	[ ]	Problem: yes no
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to gain weight?):

Menstruation

*** Have you missed any menstrual periods over the past three months?**

*** How many periods have you had?**

		On Pill: yes no
Number of Periods		Problem: yes no
over the past **3 Months**	[ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to try to get your periods back?):

Importance of Shape

*** Over the past 4 weeks has your shape been important in influencing how you feel about (judge, think, evaluate) yourself as a person?**

Last 4 Weeks	[ ]
Month 2	[ ]
Month 3	[ ]

Importance of Weight

*** Over the past 4 weeks has your weight been important in influencing how you feel about (judge, think, evaluate) yourself as a person?**

Last 4 Weeks	[ ]	Problem: yes no
Month 2	[ ]	Notes:
Month 3	[ ]	
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to work on reducing the amount of influence that shape and weight have on your self-evaluation?):

Objective Bulimic Episodes

*** In the past 4 weeks have there been any times when you felt that you have eaten too much in one go, and others would agree it's an objectively large amount of food?**
***Did you have a sense of loss of control at the time?**

Number of Days	[ ] [ ]	
Number of Episodes/Month	[ ] [ ] [ ]	
Month 2 - Days	[ ] [ ]	Problem: yes no
Month 3 - Days	[ ] [ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to reduce bingeing?):

Longest Continuous Period Free from Objective Episodes Over Past 3 Months

*** Were there ever 2 or more weeks that passed in the last 3 months when you didn't binge?**

Must be more than 2 weeks [ ] [ ]

Dietary Restriction Outside of Bulimic Episodes

*** Outside the times when you have lost control over eating, have you been restricting the amount you eat? Immediately before or after?**

This should be the average degree of dietary restriction:
0 - No extreme restriction outside of binge
1 - Extreme restriction outside of binge (less than 1200 calories)
2 - No eating outside of binge

Month 1	[ ]	
Month 2	[ ]	Problem: yes no
Month 3	[ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to reduce restricting in between binges?):

Self Induced Vomiting

*** Over the past 4 weeks have you made yourself sick as a means of controlling your shape or weight?**

Number of Days	[ ] [ ]	
Number of Episodes/Month	[ ] [ ] [ ]	
Month 2 - Days	[ ] [ ]	Problem: yes no
Month 3 - Days	[ ] [ ]	Notes:
Precontemplation	____%	
Contemplation	____%	
Action/Maintenance	____%	
Internality	____%	

Notes (what are you doing to reduce vomiting?):

Laxative Misuse

*** Over the past 4 weeks have you taken laxatives as a means of controlling your shape or weight?**

Number of Days	[ ] [ ]	
Number of Episodes/Month	[ ] [ ] [ ]	
Average Number	[ ] [ ] [ ]	
Month 2 - Days	[ ] [ ]	
Month 3 - Days	[ ] [ ]	Problem: yes no
Type of Laxative	_____	Notes:
Precontemplation	____%	
Contemplation	____%	

Action/Maintenance ____%
Internality ____%

Notes (what are you doing to reduce your use of laxatives?):

Diuretic Misuse

*** Over the past 4 weeks have you taken diuretics as a means of controlling your shape or weight?**

Number of Days [ ] [ ]
Number of Episodes/Month [ ] [ ] [ ]
Average Number [ ] [ ] [ ]
Month 2 - Days [ ] [ ] Problem: yes no
Month 3 - Days [ ] [ ] Notes:
Type of Diuretic _____
Precontemplation ____%
Contemplation ____%
Action/Maintenance ____%
Internality ____%

Notes (what are you doing to reduce your use of diuretics?):

Intense Exercising

*** Over the past 4 weeks have you exercised as a means of controlling your weight, altering your shape or amount of fat, or burning off calories?**

Number of Days [ ] [ ]
Time/Day [ ] [ ] [ ] Problem: yes no
Month 2 - Days [ ] [ ] Notes:
Month 3 - Days [ ] [ ]
Precontemplation ____%
Contemplation ____%
Action/Maintenance ____%
Internality ____%

Notes:

Abstinence from All Weight Control Behaviour

(Only ask this if at least one compensatory behaviour has been rated as present, more than twice a week, for the past 3 months)

Have there been two or more weeks where you engaged in none of the following behaviours? (i.e. restriction, self-induced vomiting, laxative misuse, diuretic misuse, excessive exercise)

Must be more than 2 weeks [ ] [ ]

Denial of Seriousness
(If BMI is less than 17.5)

In the past 3 months have you felt that being at your current weight presents any serious health risks?

Yes No

Honesty

***Thinking back over what we have discussed, would you have answered any questions differently if you knew that your responses would be shared with the treatment team?**
***If yes, what questions would you have answered differently?**

Appendix I: St. Paul's Hospital Eating Disorders Program research team members and roles

Dr. Josie Geller, R. Psych
Psychologist, Eating Disorders Program
Director of Research, Eating Disorders Program, St. Paul's Hospital
Associate Professor, Department of Psychiatry, Faculty of Medicine, UBC
Senior Scholar, Michael Smith Foundation for Health Research
Research Scientist, CHEOS, St. Paul's Hospital

Dr. Suja Srikameswaran, R. Psych
Psychologist, Eating Disorders Program
Professional Practice Leader, Psychology, Providence Healthcare
Assistant Professor, Department of Psychiatry, Faculty of Medicine, UBC
Adjunct Professor, Department of Psychology, Faculty of Arts, UBC

Dr. Erin Dunn, R. Psych
Psychologist, Eating Disorders Program
Readiness Program Coordinator

Megan Hughes-Jones, BA
Research Assistant
Master's student in Counselling Psychology, The University of British Columbia
[Co-investigator of thesis research (Principle Investigator, Dr. Beth Haverkamp)]

Sherrie Myers, BSc
Research Assistant
Master's student in Counselling Psychology, The University of British Columbia

Krista Brown, BA
Previous Research Assistant (position end date July 2008)
Master's student in Clinical Psychology, The University of Hawaii

Appendix J: Ethical considerations

The research design employed in the large-scale study (i.e. interview and completion of questionnaire package) from which data was accessed posed minimal risk to clients, as defined by the UBC and Providence Healthcare Research Ethics Boards; this large scale study had ethical approval. All individuals whose data was included in the current study had previously consented to participate in EDP research.

The SPH EDP research assessments were completely confidential to reduce participant vulnerability regarding the impact of responses on program recommendations and future treatment. This aimed to increase the validity of the clinical research and protect the rights and well-being of participants. Furthermore, as stated above, contact information was provided on the consent forms should participants need to de-brief any component of the research or request a summary of results. All data was stored in locked filing cabinets in the locked office of M. Hughes-Jones, which is located in the SPH EDP outpatient services (Room 423). Each participant was given a project ID prior to her interview with the research assistant, which was referenced for the duration of the study, including the follow-up period. All questionnaires and study materials were labeled with this ID. The only information linking the project IDs with the participants' identifying information was a client list on the secure (i.e. password protected) hard drive of the EDP research assistants. As such, while the research team may access participant data for research purposes, approved by the UBC and Providence Healthcare Research Ethics Boards, participant identity is protected. Furthermore, no treatment providers in the EDP have access to the research data.

Appendix K: Certificate of ethical approval

PROVIDENCE HEALTH CARE Research Institute

UBC-Providence Health Care Research Institute
Office of Research Services
11th Floor Hornby Site - SPH
c/o 1081 Burrard St.
Vancouver, BC V6Z 1Y6
Tel: (604) 806-8567
Fax: (604) 806-8568

ETHICS CERTIFICATE OF EXPEDITED APPROVAL

PRINCIPAL INVESTIGATOR:	DEPARTMENT:	UBC-PHC REB NUMBER:
Beth E. Haverkamp	UBC/Education/Educational & Counselling Psychology, and Special Education	H09-00312

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

Institution	Site
Providence Health Care	St. Paul's Hospital

Other locations where the research will be conducted:
N/A

COINVESTIGATOR(S):
Josie Geller
Megan Hughes-Jones

SPONSORING AGENCIES:
UBC Faculty of Education

PROJECT TITLE:
Recovery in the Eating Disorders: The Role of Perceived Mutuality in Close Relationships and Social Support Satisfaction

THE CURRENT UBC-PHC REB APPROVAL FOR THIS STUDY EXPIRES: March 6, 2010

The UBC-PHC Research Ethics Board Chair or Associate Chair, has reviewed the above described research project, including associated documentation noted below, and finds the research project acceptable on ethical grounds for research involving human subjects and hereby grants approval.

DOCUMENTS INCLUDED IN THIS APPROVAL:	APPROVAL DATE: March 6, 2009	
Document Name	**Version**	**Date**
Protocol:		
Research Proposal	1	February 20, 2009
Other Documents:		
Permission to access data	1	February 20, 2009

CERTIFICATION:

1. The membership of the UBC-PHC REB complies with the membership requirements for research ethics boards defined in Part C Division 5 of the Food and Drug Regulations of Canada.
2. The UBC-PHC REB carries out its functions in a manner fully consistent with Good Clinical Practices.
3. The UBC-PHC REB has reviewed and approved the research project named on this Certificate of

Approval including any associated consent form and taken the action noted above. This research project is to be conducted by the principal investigator named above at the specified research site(s). This review of the UBC-PHC REB have been documented in writing.

Appendix L: Tables of descriptive information for all study measures

Means, Standard Deviations, and Alphas for Eating Disorder Symptoms (EDI-2; N = 31)

Variable	*M*	*SD*	Range	Cronbach's alpha
Drive for thinness	15.77	5.65	0-21	.83
Bulimia	9.23	7.10	0-21	.92
Body dissatisfaction	18.06	8.44	2-27	.92
Ineffectiveness	13.85	7.73	0-28	.88
Perfectionism	9.48	5.03	1-18	.82
Interpersonal distrust	5.16	3.77	0-18	.69
Introceptive awareness	13.61	7.55	0-30	.83
Maturity fears	5.21	4.57	0-17	.74
Aesceticism	9.93	4.00	4-18	.54
Impulse regulation	8.0	6.68	0-27	.80
Social insecurity	8.35	4.54	0-20	.71
Total EDI	43.43	15.51	9-69	.90

Means, Standard Deviations, and Alphas for Psychiatric Symptoms (BSI; N = 31)

Variable	*M*	*SD*	Range	Cronbach's alpha
Somatisation	1.55	0.93	0.00-3.29	
Obsessive compulsive	2.39	1.09	0.00-4.00	
Interpersonal sensitivity	2.40	1.12	0.00-4.00	
Depression	2.08	1.05	0.50-4.00	.89
Anxiety	1.86	1.15	0.17-4.00	
Hostility	1.24	0.86	0.20-4.00	
Phobic anxiety	1.06	0.90	0.00-2.80	
Paranoid ideation	1.41	0.94	0.00-3.40	
Psychoticism	1.82	1.06	0.20-4.00	
Positive symptom total	38.03	10.58	15.00-51.00	
Positive symptom distress index	2.33	0.65	1.17-3.41	
Global symptom index	1.78	0.86	0.38-3.15	
Total BSI	93.84	44.00	20.00-167.00	.97

Means & Standard Deviations for Readiness and Motivation (RMI; N = 31)

Variable	*M*	*SD*	Range
Cognitive Precontemplation	36.61	29.26	0-100
Cognitive Contemplation	42.31	25.58	0-95
Cognitive Action	21.32	25.85	0-90
Cognitive Internality	87.89	20.82	30-100
Binge Precontemplation	14.09	20.16	0-70
Binge Contemplation	35.00	35.42	0-100
Binge Action	50.91	42.53	0-100
Binge Internality	94.00	14.04	50-100
Restriction Precontemplation	69.03	27.76	10-100
Restriction Contemplation	14.84	18.91	0-65
Restriction Action	16.13	23.12	0-90
Restriction Internality	67.35	32.70	0-100
Compensation Precontemplation	56.66	25.10	0-100
Compensation Contemplation	21.64	19.18	0-65
Compensation Action	21.69	21.80	0-75
Compensation Internality	85.68	18.60	50-100

Note. Readiness and Motivation = RMI Global Symptom Domains

Means, Standard Deviations, and Alphas for Perceived Mutuality (MPDQ; N = 31)

Variable	*M*	*SD*	Range	Cronbach's alpha
Be receptive	5.13	0.81	3.00-6.00	
Get impatient	2.55	0.89	1.00-6.00	
Try to understand	5.26	0.73	4.00-6.00	
Get bored	2.23	1.07	1.00-5.00	
Feel moved	3.97	1.43	1.00-6.00	
Avoid being honest	2.16	1.10	1.00-5.00	
Be open-minded	5.07	0.98	3.00-6.00	
Get discouraged	2.73	1.17	1.00-5.00	
Get involved	4.61	0.99	2.00-6.00	
Have difficulty listening	2.23	1.04	1.00-5.00	
Feel energized by our conversation	4.33	1.03	2.00-6.00	
Pick on my feelings	4.45	1.12	2.00-6.00	
Feel as if we're not getting anywhere	2.90	1.25	1.00-6.00	
Show an interest	4.84	1.00	2.00-6.00	
Get frustrated	2.84	1.04	1.00-5.00	
Share similar experiences	3.68	1.30	1.00-6.00	
Keep feelings inside	2.68	1.42	1.00-6.00	
Respect my point of view	4.71	1.16	2.00-6.00	
Change the subject	2.03	0.91	1.00-5.00	
See the humour in things	4.00	1.48	1.00-6.00	
Feel down	2.32	0.83	1.00-4.00	
Express an opinion clearly	4.84	1.04	2.00-6.00	
Total PM	4.56	0.56	3.18-5.64	.88
Self Perspective	4.69	0.61	3.27-5.73	.82
Other Perspective	4.43	0.62	3.09-5.55	.75
Positively valenced items	4.58	0.63	3.27-5.73	.83
Negatively valenced items	4.53	0.71	1.30-4.50	.86

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Means, Standard Deviations, and Alphas for Global Social Support Satisfaction (Global Duke; N = 31)

Variable	*M*	*SD*	Range	Cronbach's alpha
Caring about what happens to me	3.84	1.21	1.00-5.00	
Love and affection	3.68	1.38	1.00-5.00	
Chances to talk about problems at school, work, or my day to day activities	3.48	1.46	1.00-5.00	
Chances to talk to someone I trust about my personal and family problems	3.61	1.38	1.00-5.00	
Chances to talk about money matters	3.53	1.20	1.00-5.00	
Invitations to go out and do things with her/him	3.23	1.43	1.00-5.00	
Useful advice about important things in life	3.52	1.23	1.00-5.00	
Help when I am sick in bed	2.97	1.61	1.00-5.00	
Sum	27.89	7.59	10.00-38.00	
Mean	4.05	0.84	1.75-5.00	.85

Means, Standard Deviations, and Alphas for Closest Person Social Support Satisfaction (Closest Person Duke; N = 31)

Variable	*M*	*SD*	Range	Cronbach's alpha
Caring about what happens to me	4.52	0.68	3.00-5.00	
Love and affection	4.13	1.15	1.00-5.00	
Chances to talk about problems at school, work, or my day to day activities	4.03	1.05	2.00-5.00	
Chances to talk to someone I trust about my personal and family problems	4.13	0.99	1.00-5.00	
Chances to talk about money matters	3.73	1.28	1.00-5.00	
Invitations to go out and do things with her/him	4.00	1.39	1.00-5.00	
Useful advice about important things in life	4.06	1.06	1.00-5.00	
Help when I am sick in bed	3.69	1.42	1.00-5.00	
Sum	32.29	6.45	14.00-40.00	
Mean	3.49	0.94	1.25-4.75	.86

Appendix M: Table of skewness and kurtosis

Skewness and Kurtosis for Eating Disorder and Psychiatric Symptomatology, Readiness, Perceived Mutuality, and Social Support Satisfaction (N = 31)

Variable	Skewness	Kurtosis
EDI-2 Total Score	-.45	-.25
BSI Global Symptom Index	-.17	-1.25
RMI Restriction Precontemplation Score	-.64	-.58
MPDQ Total	-.34	-.02
Global Social Support Satisfaction	-.97	.28
Closest Person Social Support Satisfaction	-.87	.54

Note. Variables used in primary correlational analyses.