

PARTNER DISTRESS IN THE CONTEXT OF ANOREXIA NERVOSA: THE ROLE
OF PATIENT MOTIVATION TO CHANGE AND PARTNER BEHAVIORS

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ABSTRACT

MELANIE SANDY FISCHER: Partner distress in the context of anorexia nervosa: The role of patient motivation to change and partner behaviors
(Under the direction of Donald H. Baucom)

Although romantic relationships can be a source of support and a stressor for individuals with anorexia nervosa (AN), little is known about these relationships and the partners. This study examined patients' motivation to change and partner behaviors as predictors of partner distress in three domains (negative affect, relationship satisfaction, caregiver distress). 16 females with AN and their male partners were assessed using self-report measures of patients' motivation to change and partner outcomes. An observational coding system was developed to measure partner behaviors based on videotaped interactions of the couples. Patients' motivation to change did not predict partner distress, but partners' attempts to promote behavior changes in the patient moderated the relationship between patients' motivation to change and partners' caregiver distress. Partners also experienced lower levels of negative affect if they engaged in more accepting/validating behaviors. The findings underscore the importance of context-specific partner behaviors. Implications and future directions are discussed.

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CHAPTER 1

INTRODUCTION

Anorexia Nervosa and its Interpersonal Context

Anorexia nervosa (AN) is an eating disorder characterized by an extreme desire to be thin, driven by debilitating fear of gaining weight, and preoccupation with body weight and shape. As a result, patients engage in rigid food restriction, and a subset of patients engage in purging behaviors (e.g., laxative use or self-induced vomiting) and excessive exercise, leading to extremely low body weight. In addition, body image distortions are characteristic, in such a way that patients perceive themselves as overweight even if they are emaciated (American Psychiatric Association, 2000; Beumont, 2002; Garfinkel, 2002). In addition to significant psychological suffering, the physical consequences and medical complications following malnutrition and emaciation can be dramatic, resulting in the highest mortality rates (about 5% per decade) related to a psychological disorder (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005; Harris & Barraclough, 1998; Papadopoulos, Ekblom, Brandt, & Ekselius, 2009; Sullivan, 1995).

Despite the severity of the condition, many patients often experience considerable ambivalence about recovery and deny or do not fully recognize the seriousness of the problem. Low motivation for change complicates treatment and contributes to a prolonged course of the disorder (Casasnovas et al., 2007; Sullivan, 2002; Vitousek, Watson, & Wilson, 1998). The disorder often appears “ego-syntonic” in nature, with

many of the beliefs and ideals central to AN remaining even after recovery (Garner & Bemis, 1982). In addition, food restriction and other eating disordered behaviors can serve an anxiolytic function (Strober, 2004) and provide a sense of control, safety, and confidence that the patient would otherwise lack (Serpell, Treasure, Teasdale, & Sullivan, 1999). Other factors along with the examples above represent perceived psychological secondary “benefits” of anorexia that can decrease the motivation of patients to seek or fully engage in treatment (Vitousek et al., 1998; Williams & Reid, 2010).

In an attempt to understand this complex and serious disorder, most research and clinical attention has been focused on symptoms and individual characteristics of patients with AN. However, AN also occurs in an interpersonal context. This has been recognized in studies involving the families of adolescent patients with AN and the role that family dysfunction can play in the etiology and maintenance of the disorder (Ravi, Forsberg, Fitzpatrick, & Lock, 2009; Vandereycken, 2002). Likewise, the development of family-based treatments for adolescent AN has resulted in the most successful treatment approach thus far (Eisler, Dare, Hodes, Russell, Dodge, & Le Grange, 2000; Eisler, Dare, Russell, Szmulker, Le Grange, & Dodge, 1997; Eisler, Simic, Russell, & Dare, 2007; Lock, 2002; Lock, Couturier, & Agras, 2006; Lock, Agras, Bryson, & Kraemer, 2005; Lock, Le Grange, Agras, & Dare, 2001; Russell, Szmulker, Dare, & Eisler, 1987; Treasure, Schmidt, & Macdonald, 2010).

Relevance of Romantic Relationships for Adults with AN

For many adults with AN, the immediate influence of their family of origin may be less predominant; instead, their romantic partners may be their primary and closest interpersonal relationship. In the last three decades, two myths have been dispelled. First,

AN does not only affect adolescents but can affect individual across the lifespan (Bulik, Sullivan, Fear, Pickering, Dawn, & McCullin, 1999; Hoek & van Hoeken, 2003; Keith & Midlarsky, 2004). Second, the myth that women with AN do not enter romantic partnerships has been debunked. In fact, a significant group of patients seeking treatment is married (Bussolotti, Fernández-Aranda, Solano, Jiménez-Murcia, Turón, & Vallejo, 2002; Heavey, Parker, Bhat, Crisp, & Gowers, 1989, Van den Broucke & Vandereycken, 1988). Despite these realizations, empirical research on the nature of relationships of couples in which one member has AN as well as the impact of AN on the partners remains scarce. Nevertheless, the limited findings underscore the importance of intimate relationships in the context of AN. Some investigators have considered marital conflict and distress as etiological factors in eating disorders and suggested that for certain adult patients with late onset, marital distress may have been a trigger for eating-disordered behavior (e.g., Dally, 1984). Regardless of the etiology of AN among adults in committed relationships, it may be even more important to understand how these couples currently function in the presence of the disorder. Moreover, reciprocal influences of the disorder and the interpersonal context may play a role in recovery or maintenance of the problem. In fact, supportive partners may be an invaluable resource for some patients and play a critical role in recovery. In a study based on interviews with 59 women who had been treated for AN on average 12 years earlier, supportive intimate relationships were the most commonly cited factor that contributed to their recovery (Tozzi, Sullivan, Fear, McKenzie, & Bulik, 2003). Previous studies, despite small sample sizes, have found similar subjective accounts of the importance of romantic relationships in the recovery from AN (Beresin, Gordon, & Herzog, 1989; Hsu, Crisp, & Callender, 1992). In other

qualitative studies, developing supportive, non-judgmental relationships in the family and with friends emerged as an important factor contributing to recovery as well (Federici & Kaplan, 2008). More generally, aspects of intimate relationships such as social support have been found to contribute to positive outcomes across a range of psychological and medical conditions, including breast cancer (Baucom et al., 2009; Scott, Halford, & Ward, 2004) and anxiety disorders (Fokias & Tyler, 1995; Steketee, 1993).

Unfortunately, the interpersonal environment of individuals with AN does not always have a positive effect. Expressed emotion (EE) is a widely studied concept that describes behavioral and emotional responses of family members towards a patient; criticism/hostility is one of the subcategories that has been shown to be highly predictive of relapse rates in schizophrenia and bipolar disorder (Kavanagh, 1992; Miklowitz, 2007). Initial studies on EE among family members of eating disordered patients have shown elevated levels of EE as well (Kyriacou, Treasure, & Schmidt, 2008; Zabala, Macdonald, & Treasure, 2009), which may also be related to greater severity or a less favorable treatment outcome of the disorder (Le Grange, Eisler, Dare, & Hodes, 1992; Szmukler, Eisler, Russell, & Dare, 1985; van Furth, van Strien, Martina, van Son, Hendrickx, & van Engeland, 1996). Thus far, these studies focus on parents and siblings of eating disordered patients, usually assessed in mixed samples with both AN and bulimia nervosa (BN). However, a study including both parents and partners as primary caregivers of patients with BN revealed that high EE was associated with both greater symptom severity at the beginning of treatment and worse treatment outcome (Hedlund, Fichter, Quadflieg, & Brandl, 2003). Given the complexity of AN and its toll on family members, it is likely that some partners serving as caregivers for AN patients will display

elevated levels of EE as well. Consequently, AN patients might be affected in a similar fashion as BN patients, and as AN patients with high EE parents. These suggestive findings underscore the importance of understanding both positive and negative influences of romantic partners on the patient and the treatment of AN, especially given the limited success of current treatments for AN in adults.

Relationship Characteristics of Patients with AN and their Partners

Having an eating disorder may negatively affect an intimate relationship, and relationship conflict can in turn serve as a general, chronic stressor with negative influences on AN symptoms. Friedman, Dixon, Brownell, Whisman, and Wilfley (1999) found a significant relationship between poor marital quality and body image satisfaction in a large sample of dieters, after controlling for BMI, self-esteem, age, and gender. Even though this was not a clinical sample and the causal direction of the effect is unknown, it underscores the importance of understanding an individual symptom of AN such as body image satisfaction in an interpersonal context. Patients with AN and their partners have indeed been found to experience considerable amounts of relationship distress (Hodes, Timimi, & Robinson, 1997; Van den Broucke & Vandereycken, 1989), and both emotional (Van den Broucke, Vandereycken, & Vertommen, 1995c) and physical intimacy are especially affected (Ghizzani & Montomoli, 2000; Morgan, Wiederman, & Pryor, 1995; Pinheiro et al., 2010). Some of these interpersonal issues are closely tied to physical consequences of AN (e.g., loss of libido) as well as psychological symptoms of AN, such as the implications of discomfort with one's own body for sexual intimacy (Ghizzani & Montomoli, 2000). Likewise, restricted self-disclosure based on shame and guilt about eating disordered behaviors, fearfulness about the partner's reactions, or the

attempt to hide AN may interfere with emotional closeness (Van den Broucke et al., 1995c).

These are only some of the ways in which AN could lead to relationship difficulties. Subsequently, increased relationship difficulties can lead to higher stress levels in everyday life, which in turn may negatively impact the patient's eating disorder. The reciprocal nature of the influences is difficult to demonstrate within a single study; however, the few available findings combined suggest that such a relationship is likely to exist. This has been recognized for other disorders, where the high comorbidity of relationship distress and individual psychopathology has led to integrated treatments addressing both relationship and individual functioning (Hahlweg & Baucom, 2008; Snyder & Whisman, 2003; Whisman & Baucom, 2012).

Overall, a high level of relationship distress is likely to interfere with social support for individuals with AN. Whereas communication within these couples does not appear to be as overtly negative as in maritally distressed couples from the general population, couples in which one partner has AN lack positive, constructive communication skills and avoid conflict (Van den Broucke, Vandereycken, & Vertommen, 1995a, 1995b). In addition, levels of open communication about thoughts and feelings are low (Van den Broucke et al., 1995c), and problems around self-disclosure regarding the eating disorder that have been found both for AN (Evans & Wertheim, 2002) and BN couples (Huke & Slade, 2006). These findings suggest that partners often do not have adequate opportunities to understand the patient's experiences and to offer social support optimally.

The Experience of Partners

In addition to the relationship difficulties described above, partners of individuals with AN also experience unique stress as caregivers. Again, much of the research on caregivers of patients with AN has focused on the parents of adolescent patients, with findings indicating that these parents experience high levels of caregiver burden and general distress (e.g., Zabala et al., 2009). Similarly, studies including samples of both parents and partners of eating disordered patients have found high levels of caregiver distress (Graap et al., 2008), even higher than caregivers of patients with psychosis (Treasure et al., 2001). Furthermore, husbands of patients with AN appear to experience higher levels of psychopathological symptoms compared to normal controls (Van den Broucke & Vandereycken, 1989).

Partners clearly face a difficult situation when their loved ones suffer from a disorder with both severe psychological and physical consequences. Although research to date is scant, the limited empirical evidence suggests that partners do experience a considerable amount of relationship and caregiving-related distress. Unfortunately, apart from overall levels of individual and relationship distress, little is known about what partners experience in the context of AN. Similarly, it remains to be investigated how partners respond behaviorally when interacting with the patient about AN-related topics. Whether and in what way the partner takes an active role in responding to the disorder may well have an influence on the patient, as well as shape the partner's own experience.

Thus, it is important to develop a better understanding of the partner's functioning and how the partner's behavior is related to patient functioning. This understanding of the interpersonal context of patient behavior, partner responses, and partner distress may also

prove useful in the further development of couple-based treatments for adult AN that takes interpersonal factors into account to facilitate recovery (Bulik, Baucom, Kirby, & Pisetsky, 2011; Bulik, Baucom, & Kirby, 2012; Treasure, Gavan, Todd, & Schmidt, 2003; Woodside, Lackstrom, & Shekter-Wolfson, 2000).

The role of the patient's motivation to change. As with other psychological disorders, the general severity of the patient's symptoms will likely be associated with the partner's level of distress (Baronet, 1999). Typically, a more severe disorder results in a stronger interference with everyday life, increases burden on the partner to take over roles, restricts freedom to engage in a range of activities, interferes with ways in which the couple usually relates to each other, imposes additional financial burden due to treatment expenses or inability to work, and generally serves as a source of conflict between the partners (Hahlweg & Baucom, 2008, Leichner, Harper, & Johnston, 1985; Whitney, Haigh, Weinman, & Treasure, 2007). However, some features of AN may be especially relevant in the context of close relationships and contribute to the partner's experience in a unique way. Low motivation to change or ambivalence about recovery may be such a unique factor (Treasure et al., 2003). Patients with AN often experience a considerable amount of ambivalence about recovery, and this is observed even for patients who seek treatment (Williams & Reid, 2010). Whereas a lack of motivation to change undoubtedly poses challenges in the treatment of AN (Vitousek et al., 1998), consequences for the relationship and the partner seem likely as well. For example, concerned partners who see the patient struggle with an eating disorder are distressed themselves and hope that the patient will make strong efforts to recover (Huke & Slade, 2006). Unfortunately many patients reject attempts from their partners to help the patient

recover. Knowing that a sense of control appears to be one of the most important psychological factors of AN that patients experience as beneficial (Serpell et al., 1999), it is not surprising that patients might be uncomfortable forfeiting some of that control by allowing the partner to play an active role in their eating behavior. In particular, patients with low motivation to change might be especially reluctant to allow partners to take a significant role in their recovery.

Whereas AN-related behaviors and consequences of AN (e.g., restricted role functioning, financial stressors) can result in a significant amount of stress on the couple, the manner in which the two individuals address these stressors also is likely to be important for both people's functioning and their relationship. That is, the two individuals might respond to these stressors either in an adaptive or maladaptive manner, typically referred to as dyadic coping. Adaptive dyadic coping has been linked to positive outcomes, both in terms of individual well-being and marital functioning in the face of a variety of stressors (Revenson, Kayser, & Bodenmann, 2005). Whether the two partners appraise the stressor as a dyadic problem, along with a shared goal between the partners, is crucial to a successful dyadic process (Lyons, Mickelson, Sullivan, & Coyne, 1998). Even if a patient suffers from a severe disorder, a patient's strong motivation to change provides the couple with a shared goal (recovery). This allows them to join in a mutual effort to achieve the shared outcome (e.g., discussing the best treatment options, providing emotional support), and develop a sense of working together as a team to persevere through a difficult time (Huke & Slade, 2006; Lyons et al., 1998). On the contrary, low motivation to change on the part of the patient could result in the couple lacking a shared goal, assuming the partner wants the patient to recover. Dyadic coping

would be compromised, and the partner may feel like he is fighting both against the disorder and the patient. In this instance, the couple faces an even more complicated interpersonal context within which to address AN. Negative partner outcomes (including caregiver stress, relationship distress, negative affect) and a less favorable interpersonal environment for AN may be the result (Treasure et al., 2003).

In addition to contributing to a lack of dyadic coping, a low level of motivation to change in the patient may be related to negative outcomes for the partner in other ways:

Loss of hope. If the patient displays a low level of motivation for recovery, the partner might eventually feel discouraged, disappointed, and hopeless that the patient will eventually improve (Huke & Slade, 2006). In this instance, present stressors and sacrifices in the partner's everyday life due to AN (e.g., financial burden, worry about the patient's physical health) might become less tolerable because they appear to be stable. Graap et al. (2008) had parents and partners of eating disordered patients rate the severity of problem areas related to the experience of caregiving. Disappointment resulting from the chronic course of the illness was rated as a moderate or serious problem by the family members. Loss of hope may be related to higher levels of negative affect and higher caregiver distress among the partners. Partners might also resent the patient for the sacrifices the partner has made, which would also result in increased relationship distress.

Partner's perception of the importance of AN. If the patient shows little motivation to work towards recovery, the partner could come to believe that AN is more important to the patient than the relationship is. This may particularly be the case if the partner believes the patient has control over the disorder and could change if she desired (Treasure et al., 2003). Eventually, the partner may feel unloved or not cared about,

subsequently resulting in lower relationship satisfaction and higher levels of negative affect. In this way, the partner's distress would not be limited to AN only but could broaden to general concerns about the couple's relationship and how important their relationship is to the patient.

AN behaviors as a source of conflict in everyday interactions. If the partner believes that AN is more important than the relationship is, the couple is likely to be more prone to negative interactions and arguments about the AN and associated behaviors as they arise on a daily basis. The partner might be less willing to overlook negative effects on their everyday life and confront the patient about her behaviors more frequently, resulting in more negative interactions within the relationship. In Graap et al.'s investigation (2008), communication problems and conflicts with the patient was rated as the second most serious problems that family members face as a caregiver.

Exploring the Partner's Own Responses to AN

In addition to the seriousness of AN and patients' frequent low motivation to change, the partners' sense of their own role and responsibilities in responding to the AN may be related to their own well-being and relationship satisfaction. To date, little is known about the experiences of partner caregivers in AN beyond their overall levels of distress. However, partners are not merely passively affected by the patients' eating disorder. They react in ways that may facilitate or detract from their own and the patient's ability to cope with the situation. This could range from avoiding issues related to the AN, to very active efforts to assist the patient. Social support, usually divided into emotional and instrumental support, is one way in which partners can respond behaviorally to both everyday stressors and psychological or medical illnesses of their

spouse. Provision of social support has been linked to positive treatment outcomes, lower stress, and higher relationship satisfaction for both partners (Gremore et al., 2011; Scott et al, 2004; Sullivan, Pasch, Johnson, & Bradbury, 2010).

Whereas partners of AN patients do provide social support to the patient (Quiles & Terol, 2009; Tiller et al., 1997), focusing on social support may not be an ideal paradigm to develop a thorough understanding of the partners' behavior and how it relates to their *own* experience and distress. That is, social support typically is investigated with regard to patient outcomes rather than support provider outcomes. In addition, the concept of social support might not fully capture the specific partner behaviors most relevant to their unique situation in the context of AN. By definition, social support occurs in the context in which one individual experiences a stressor, and the partner engages in efforts to assist with finding or implementing a solution (instrumental support), or to alleviate the emotional distress of the support recipient (emotional support). Social support typically assumes the support provider is helping the support recipient achieve the recipient's goal (e.g., getting better). However, when considering AN and the two persons' frequent contrasting goals, there will be instances in which the patient would not want the partner to be involved, as well as situations in which the partner does not want to support the patient's desired behavior (e.g., if the patient wants to lose more weight). Therefore, it is likely that partners engage in other strategies to respond to the situation on an interpersonal level that are not confined to social support.

Lyons et al. (1998) have identified different relationship-oriented goals that partners might have during communal coping. One goal of communal coping is

relationship maintenance and development. If a partner is committed to a relationship, he/she will attempt to address issues that threaten their relationship. Given the multifaceted negative effects of AN on the relationship, AN could be seen as such a threat to the couple's relationship. Consequently, many partners engage in a range of behaviors that aim at promoting behavior change in the patient toward the goal of recovery, removing AN as a stressor on the couple. A second reason for communal coping efforts according to Lyons et al. (1998) is the psychological well-being of a significant other. They describe empathy-driven coping as the efforts of an individual to maximize their partner's emotional well-being. Consistent with this motivation, partners of patients with AN may also try to promote behavior change to counter the eating disorder when they see the patient struggle with it. Alternatively, they might try to improve the patient's emotional well-being in other ways, such as supporting the patient emotionally, and trying to make the patient feel accepted and loved. These theoretical considerations also match with the clinical reports of husbands of patients with BN, some of whom described that they eventually concluded that they cannot alter the eating disordered behaviors, subsequently focusing their efforts on making the patient feel loved and emotionally supported as best as they can (Huke & Slade, 2006). Consistent with these two components of communal coping, during a couple-based treatment for AN (Bulik et al., 2011; Bulik et al., 2012), informal observation suggested that partners engaged in behaviors oriented toward AN-related behavior change and/or acceptance of the patient. The goal of the current study is to explore empirically whether these two strategies that partners employ as a response to the disorder are associated with the partners' own individual well-being, and if these partner behaviors have a different set of

associations as a function of the patients' level of change motivation. For example, does the partner's focusing on AN-related behavior change result in more negative affect if the patient is unmotivated to change? In addition, it is important to investigate the partners' quality of communication in addition to their goals during communication. The more skillful partners are in their communication with the patient, the more likely they will receive a positive reaction from the patient (Treasure et al., 2003), regardless of whether the partners are promoting behavior change or demonstrating emotional acceptance. Within the current study, the two behavioral strategies that partners engage in during conversations with the patient are conceptualized in the following ways:

Promotion of behavior change. Some partners engage in behavioral strategies that attempt to promote change in eating disordered behaviors of the patient. For example, they might monitor eating, keep the patient's favorite foods in the house in the hope she might eat them, try to reason with her about the disorder in order to talk her out of it, convince her to get better by listing reasons or telling her that she is not fat or needs to gain weight, convince her to seek treatment, become critical about her AN behaviors or threaten her with consequences (e.g., leaving her) if she does not get better, give advice, etc. Empirical findings specific to these kinds of behaviors for partners of patients with AN are not available thus far, but partners of BN patients have reported making such efforts (Huke & Slade, 2006). Likewise, patients with AN have reported receiving instrumental support from their partners, which overlaps with the behaviors described above (Quiles & Terol, 2009; Tiller et al., 1997). Attempting to promote behavior change does not imply that the partners are successful in doing so, or that they communicate these attempts in constructive ways. Instead, their behavior suggests that recovery as a

goal is salient to the partners and that they pursue it actively. Thus, the negative effects of AN are likely to be most extreme in a couple in which the patient has a low level of motivation to change, but the partner engages in the promotion of behavior change strategies. That is, the partner is likely to experience more relationship discord, caregiver distress, and negative affect, because the patient's lack of change motivation directly interferes with the partner's primary goal of promoting behavior change. In those instances in which the patient is highly motivated to change, the partner's engaging in behavior change strategies would likely lead to a better outcome in the partner, since the couple would then have an opportunity to engage in dyadic coping.

Acceptance. The second role that partners adopt in interacting with patients around AN is not directed at changing the eating disorder, but rather at the validation and acceptance of the patient as a person and the difficulties she is experiencing with AN. Partners may attempt to make the patient feel loved and supported, accepted as a person, and generally cared for on an emotional basis as they struggle with AN. Examples of such efforts include interactions in which partners attempt to provide empathic understanding of the patient's experience or communicate acceptance, despite present symptoms and burden on the partner. Overall, behaviors in this category are much more directed towards accepting the patient in her distressed state rather than attempting to change the eating disordered behaviors. Similar to the first strategy, partners engage in these strategies to varying degrees, and they may be more or less skillful in doing so.

A patient's low level of motivation to change will not necessarily interfere with the goal of these acceptance behaviors from a partner because the partner's efforts are directed at showing understanding of the patient's experiences, rather than at changing

the AN symptoms. Even if the patient is not motivated to change, the partner can still engage in these behaviors with some success. Such acceptance behaviors from the partner are likely to be less threatening to patients than attempts to convince the patient to change AN-related behaviors. Also, if the partner takes a stance of acceptance of the patient and her experiences, the partner might be more forgiving about relapses and behaviors that potentially interfere with the relationship (such as secrecy about AN behaviors). In addition, if partners engage in acceptance behaviors in a skillful way, this context can provide the couple with opportunities to join together in their experiences of distress about the patient's condition, cope with their distress as a dyad, and potentially experience some level of emotional closeness. Overall, for the partner, this strategy might be related to higher relationship satisfaction, lower caregiver distress, and lower negative affect, irrespective of changes in AN-related behavior.

Communication skills of the partner while discussing AN. The behavioral constructs involving promotion of behavior change and acceptance describe partners' behavior independently of how interpersonally effective and skillful partners are in making these efforts. In addition, the degree to which partners are able to convey their thoughts and concerns to the patient in a positive, non-threatening way will likely be an important factor in the couples' interactions. The more the partner is able to express positive thoughts and emotions constructively, and communicate concerns and negative emotions without criticism and hostility, the more likely the patient is to respond positively during the conversations. More broadly, such a style facilitates greater warmth, positive affect, and closeness in couples (Epstein & Baucom, 2002). Thus, it is anticipated that the more constructive the partners' communication skills are when

engaging in promotion of behavior change or acceptance behaviors, the lower their own relationship distress, caregiver distress, and negative affect will be.

Hypotheses

Given the novelty of this research area and the scarcity of literature on AN patients, their relationships, and their partners, the hypotheses are viewed as exploratory in nature and results will be treated as tentative. Hypotheses were derived, when possible, from previous findings and/or theories. AN symptom severity were included in all hypotheses as a control variable. However, the empirical literature does not provide any insight into the actual relationship between AN symptom severity and partner outcome variables, including what aspects of AN symptom severity are most important. Thus, some exploratory analyses were employed first to determine which AN symptom severity variable should be controlled for (see description of measures below).

Broadly, it was expected that the patients' level of motivation to change will have an impact on the partner, and that the partners' level of engagement in promotion of behavior change and acceptance behaviors will moderate this relationship. More specifically and consistent with the above discussion, the hypotheses were:

Hypothesis 1. *While accounting for AN symptom severity, lower motivation to change in the patient will be associated with higher caregiver distress, higher relationship distress, and greater negative affect in the partner.*

Hypothesis 2. *After controlling for AN symptom severity, the degree of the partner's engagement in promotion of behavior change will moderate the relationship between the patient's motivation to change and partner outcomes (caregiver distress, relationship distress, negative affect). That is, for couples in which the patient's*

motivation for change is low, a greater degree of engagement in promotion of behavior change by the partner will be associated with higher levels of caregiver distress, relationship distress, and more negative affect in the partner. For couples in which the patient's motivation for change is high, a greater degree of engagement in promotion of behavior change will be associated with lower caregiver distress, relationship distress, and less negative affect in the partner.

Hypothesis 3. *After controlling for AN symptom severity, partners who engage in more acceptance behaviors will experience lower levels of caregiver distress, relationship distress, and negative affect.*

Hypothesis 4. *After controlling for AN symptom severity, higher global communication quality of the partner will be associated with lower caregiver distress, relationship distress, and negative affect.*

Hypothesis 4a. *After controlling for AN symptom severity, higher quality of communication from the partner when demonstrating promotion of behavior change, will be associated with lower caregiver distress, relationship distress, and negative affect.*

Hypothesis 4b. *After controlling for AN symptom severity, higher quality of communication from the partner when demonstrating acceptance will be associated with lower caregiver distress, relationship distress, and negative affect.*

Hypothesis 5. *After controlling for AN symptom severity, greater displays of resignation of the partner will be associated with higher caregiver distress, relationship distress, and negative affect.*

CHAPTER 2

METHODS

Participants

Couples in which one partner suffers from AN were recruited for a treatment outcome study combining individual therapy for adult patients suffering from AN with a couple-based intervention (Bulik et al., 2011; Bulik et al., 2012). Eligibility criteria were assessed in a screening interview. Adults of both sexes and hetero- or homosexual orientation were eligible; however, only heterosexual couples with the female partner suffering from AN entered the study. Participants had to be at least 18 years old, in a committed relationship, and cohabiting for at least one year with a partner willing to participate. Patients had to meet DSM-IV criteria for AN at the time of assessment (except for criterion D – amenorrhea), with a BMI between 16.0-19.0 at the beginning of the study. Individuals with a BMI below 16.0 were excluded because serious medical concerns at this extremely low weight are likely to require inpatient treatment. Exclusion criteria were alcohol or drug dependence in the past year, current significant suicidal ideation reported at the assessment, developmental disability that would indicate an impaired ability to benefit from the treatment, psychosis including schizophrenia, and bipolar I disorder.

Twenty couples participated in the treatment outcome study (Bulik et al., 2011; Bulik et al., 2012). Full data on the subset of measures used in the current study were available for $N = 16$ couples. The mean age for patients was 31.25 ($SD = 8.32$) years,

ranging from 23-57 years. Partners' mean age was 34.25 ($SD = 9.37$) years, ranging from 24-59 years. Participants were predominantly Caucasian, with the exception of one couple and one patient who identified as African American, and one patient as Asian.

Measures

For this study, only measures that were administered at baseline were used. Other measures and assessments at other time points were administered in the larger treatment outcome study but were not part of the current investigation. Assessments at baseline included self-report measures of both the patient and the partner, as well as a videotaped conversation of the couple discussing a problem area in their relationship related to the patient's AN.

Motivation to change (patient). The Decisional Balance (DB) scale (Cockell, Geller, & Linden, 2002; 2003) was developed to measure readiness for change among patients with AN. The scale consists of 30 items and is divided into three subscales that emerged in factor analyses: Burden, Benefits, and Functional Avoidance. The Burden subscale consists of 15 items describing perceived disadvantages of AN, such as social isolation, negative affect, or low energy. The Benefits subscale (eight items) describes perceived positive consequences of AN, such as feelings of accomplishment or self-control. Functional Avoidance (seven items) is a scale that reflects the perceived function of AN in helping to avoid having to deal with other problems (e.g., making definite plans for the future, fears about sex and/or sexuality). Participants respond on a 5-point Likert scale, and the responses are summed for each subscale. The DB scale has demonstrated good internal consistency and acceptable test-retest reliability (Cockell et al., 2002), as well as good convergent and discriminant validity (Cockell et al., 2003). For the purpose

of the current study, only the Burden subscale was used in the analyses. Cockell et al. (2003) demonstrated that this subscale correlates with other measures of readiness of change, and the perceived burdensome consequences of AN are higher among those patients who are further along the stages of change. On the contrary, the endorsement of Benefits items remains stable across different stages of change as conceptualized in the transtheoretical model of change (Cockell et al., 2003). The authors reported that other studies on perceived pros and cons of AN had found similar patterns with regard to motivation to change; therefore, the Burden scale appeared to be the best measure of level of change motivation for the purpose of the current study.

Caregiver distress (partner). A subset of items from the Caregiving Stress Scale (CSS, Pearlin, Mullan, Semple, & Skaff, 1990) was used to measure caregiver distress of the partners. The CSS was originally designed for caregivers of patients suffering from dementia. Kyriacou, Treasure, and Schmidt (2008) reworded the CSS to use with caregivers of patients with AN. The CSS contains 20 subscales, and some are not focal to the dyad of the caregiver and the patient. For example, one scale assesses conflict the caregiver has with family members other than the AN patient about their caregiving role. Another scale, Economic Strains, includes items asking general questions about the balance of income and expenses. For the purpose of the current study, only items that assess the partner's experience directly related to the patient and the illness were included in the analysis. The subset of items used for the current study represents four out of eight subscales that were combined into a "personal strains" score in Kyriacou et al.'s study (2008), which explained 31% of the distress (anxiety and depression) of parents of AN patients. The personal strains subscale also demonstrated adequate internal consistency

(Cronbach's $\alpha = .89$).

The subscales that were used for the current study are Role Captivity (three items, e.g., *“Here are some thoughts and feelings that people sometimes have about themselves as caregivers. How much do you feel trapped by your relative's illness”*), Loss of Self (two items, e.g., *“Caregivers sometimes feel that they lose important things in life because of their relative's illness. [...] How much have you lost a sense of who you are”*), Caregiving Competence (two items, e.g., *“Here are some thoughts and feelings that people sometimes have about themselves as caregivers. [...] How much do you believe you've learned how to deal with a very difficult situation”*), and Personal Gain (four items, e.g., *“Sometimes people can also learn things about themselves from taking care of a close relative. What about you? How much have you become aware of your inner strengths”*). In addition, one item of the Overload scale was included as well (*“You work hard as a caregiver but never seem to make any progress”*). Participants respond on a four point Likert-scale. Item scores of the Caregiving Competence and Personal Gain scales were recoded so that higher scores indicate higher distress for all subscales. Item scores of these 12 items were summed to form a total score of caregiver distress. Based on the current sample, this 12-item subscale had good reliability (Cronbach's $\alpha = .89$) and will be referred to as the Caregiving Stress Scale from here on.

Relationship satisfaction (partner). The Dyadic Adjustment Scale – 4 (DAS-4, Sabourin, Valois, & Lussier, 2005) was used to measure relationship satisfaction. The DAS-4 is a four item version of the original DAS (Spanier, 1976), which is a widely used valid and reliable measure for this purpose. The DAS-4 has been shown to function equally well in the assessment of relationship satisfaction and prediction of relationship

stability as the full DAS.

Negative affect and emotional well-being (partner). The partner's negative affect was assessed with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS measures positive and negative affect of the past week from ten items each. Participants respond on a 5-point Likert scale. The PANAS has been shown to be a brief measure of affect with good psychometric properties and allows for independently assessing positive and negative affect reliably. For the purpose of this study, only the negative affect scale was used because the hypotheses focused on the experience of negative affect.

Symptom severity of AN (patient). Several indicators of AN symptom severity were examined in preliminary analyses to determine which ones have an effect on the partner's outcome variables and, therefore, should be controlled for in analyses testing the hypotheses. First, AN symptoms were assessed with the Eating Disorders Examination (EDE; Cooper & Fairburn, 1987). The EDE is a reliable and valid investigator-administered interview to assess current symptoms of AN. Administration requires approximately 45 minutes and is conducted by trained interviewers. The EDE offers several subscale scores for different types of symptoms. For the purpose of the current study, only the EDE global score was used. Other indicators of AN symptom severity were the number of hospitalizations due to the eating disorder, current BMI, and lowest adult BMI.

Partner behaviors in the context of AN. The partners' behaviors while discussing AN with the patient were assessed using observational coding. All couples were videotaped for 10 minutes at pretest after they were instructed to share their

thoughts and feelings with each other about a problem area in their relationship related to AN. A macroanalytic coding system specifically developed for the current study was employed. A coding manual describes the coding system, the individual codes, and the coding guidelines in detail (Fischer & Baucom, 2011; available upon request). What follows is an overview of the major coding domains. Some codes were developed for descriptive purposes or for completeness of the coding system; therefore, not all codes are included in the hypotheses.

Coders assign one global code based on the entire conversation for each dimension based on a 5-point scale. The coding process begins with several general codes, and coders subsequently make ratings of more specific behaviors. Specifically, coders rate the partner's behaviors using the following 12 codes:

(1) *Global quality of communication – partner*. The use of communication skills that are typically seen as positive in the couples literature are taken into account for this code, such as appropriately expressing one's own thoughts and feelings subjectively and in a non-offensive manner, being respectful to the partner's point of view, maintaining eye contact with the partner, using open questions and attempting to better understand the partner's experience, abstaining from hostile criticism, defensiveness, and not withdrawing, etc. (Epstein & Baucom, 2002). Paralinguistic and nonverbal cues such as tone of voice and body posture also are taken into account.

(2) *Global quality of communication – patient*. This is the only code that focuses on the patient's behavior. The same coding guidelines are used for the patient's and the partner's communication.

(3) *Focus of the conversation*. This is a measure of how the focus of the

conversation is distributed between AN-related topics and topics that are not related to the patient's AN, based on the time the couple spends discussing AN-related versus AN-unrelated topics.

(4) Active avoidance of AN-related topics. This is a measure of the degree to which a partner actively avoids talking about AN-related topics. For a behavior or statement to fall within this category, the partner must display observable actions of avoiding an AN-related topic.

(5/6) Degree of engagement in promotion of behavior change – (5) AN-related and (6) AN-unrelated. This is a measure of the degree to which partners engage in behaviors and make statements that are geared towards the promotion of AN-related behavior changes in the patient. Codes are assigned regardless of the communication quality of the partner, the reaction of the patient, and how effective the behavior seems to be.

(7) Promotion of behavior change – quality of communication. If a given partner is rated as displaying at least some of the above behaviors (i.e., was assigned an engagement code of at least 2 on a 5 point scale), the quality of communication while doing so also is rated. The same coding guidelines as for the global communication code are employed, but ratings are only based on the times when the partner engaged in promotion of behavior change.

(8/9) Degree of engagement in acceptance – (8) AN-related and (9) AN-unrelated. This is a measure of the degree to which partners attempt to communicate acceptance, validation of the patients' experiences, and attempt to make the patient feel generally loved and supported. Codes are assigned regardless of the communication quality of the

partner, the reaction of the patient, and how effective the behavior seems to be.

(10) *Acceptance – quality of communication.* If a given partner is rated as displaying at least some of the above behaviors (i.e., is assigned an engagement code of at least 2 on a 5 point scale), the quality of communication while doing so is also rated. The same coding guidelines as for the global communication code are employed, but ratings are only based on the times when the partner engaged in acceptance behaviors.

(11) *Personal resignation.* This is a measure of the degree to which the partners express helplessness about their own role in the context of AN and the influence on the patient's recovery.

(12) *Broad resignation.* On the contrary, broad resignation measures a more global sense of resignation and the degree to which partners seem to be hopeless about the patients' AN.

Three undergraduate/recent college graduate coders who were unaware of the study design or hypotheses were trained in the use of this coding system. Training meetings were held over the course of seven weeks until the coders demonstrated good comprehension of the constructs and appeared to achieve very good reliability as assessed informally. Coding exercises for the purpose of training were conducted during the group meetings, and coders also conducted practice coding on their own, which were then discussed during group meetings. Before coding the interactions of interest for the current study, interactions of couples who were given a similar task (sharing thoughts and feelings about a problem in their relationship related to the disorder) from another couple-based treatment outcome study for obsessive-compulsive disorder (Baucom, Abramowitz, Pukay-Martin, Kelly, & Wheaton, 2008) were used for training. In addition,

interactions of couples from the treatment outcome study for AN that could not be included in the current study because of missing data on other measures also were used to demonstrate example conversations about AN. All interactions were coded by at least two coders to determine inter-rater-reliability both during training and the actual coding for the current study. Interrater reliability was calculated using intraclass correlation coefficients.

Procedure

The data used for the current study consist of selected measures from the pre-treatment assessment of couples participating in a treatment outcome study for AN, which is described in Bulik et al. (2011) and Bulik et al. (2012). All couples underwent an initial assessment with a clinician who was blind to treatment condition. The pretreatment assessment included self-report measures, interview-based assessments, and the completion of the videotaped couple interaction task. During the assessment meeting, informed consent was obtained, and both partners were asked to complete the self-report measures independently. The interview-based measures, which include the administration of the EDE, were administered with only one partner present. The couple then received the instructions for the interaction task, which was that they were to share their thoughts and feelings as they normally would about an issue in their relationship related to the AN. The research assistant remained in the room until the couple had chosen a topic and then left the room during the interaction task (ten minutes). All procedures were approved by the Biomedical Institutional Review Board of the University of North Carolina Hospitals.

CHAPTER 3

RESULTS

Descriptive statistics and preliminary analyses

Three female coders were trained in the observational coding system. Behaviors described in the coding system were displayed by the couples to varying degrees. The interrater reliability was good or very good for all codes, as indicated by intra-class correlation coefficients (ICCs, Table 1), ranging from .61 to 1.0 with a mean of .83.

Given that the coding system was newly developed for the current investigation, correlations among the codes and with other study variables were calculated to begin understanding what the various codes assess (see Table 2). The code “focus of conversation” was not included in these analyses, because it is merely a descriptor of the conversation time spent on AN-related versus unrelated topics. The codes “active avoidance,” “AN-unrelated promotion of behavior change,” “AN-unrelated acceptance,” and both resignation codes also were not included, because the behaviors either were not observed at all or were observed in only one or two couples.

As expected, the three codes regarding quality of communication are highly positively correlated. Notably, the degree of engagement in AN-related acceptance is highly correlated with the partners’ global quality of communication; both variables are associated with other measured constructs in a similar manner as well. Looking at the associations between AN severity and partner communication, AN-related acceptance shows medium size (although not significant) negative correlations with the lowest adult

Table 1

Descriptive Statistics of Observational Variables (Consensus Codes) and Inter-Rater Reliability

Code	Mean (SD)	Range	ICC
Global quality of communication – partner	3.47 (1.28)	2.00-5.00	.94
Global quality of communication – patient	3.13 (1.24)	1.00-5.00	.87
Focus of the conversation	4.63 (.72)	3.00-5.00	1.00
Active avoidance of AN-related topics	1.13 (.50)	1.00-3.00	.80
Degree of engagement in promotion of behavior change – AN related	3.00 (1.18)	1.50-5.00	.70
Degree of engagement in promotion of behavior change - AN unrelated	1.13 (.50)	1.00-3.00	.80
Promotion of behavior change - quality of communication	3.13 (1.27)	1.00-5.00	.83
Degree of engagement in acceptance - AN related	2.28 (1.41)	1.00-5.00	.90
Degree of engagement in acceptance - AN unrelated	1.00 (.00)	1.00-1.00	n/a ^a
Acceptance - quality of communication ^b	3.73 (.90)	2.00-5.00	.61
Personal resignation	1.09 (.27)	1.00-2.00	.64
Broad resignation	1.00 (.00)	1.00-1.00	1.00

Note: Possible range of scores was 1-5 for all codes. ICC = Intraclass Correlation, ^aZero variance for all coders. ^bOnly rated for partners who displayed acceptance behaviors, thus only 11 couples were included in these analyses.

Table 2

Bivariate Correlations of Observational Codes, AN Severity Indicators and Partner Outcomes.

	2	3	4	5	6	7	8	9	10	11	12
1 Global quality of communication – partner	.52*	-.02	.94**	.77**	.77**	-.10	-.29	-.16	.10	-.32	.07
2 Global quality of communication – patient	1	.02	.54*	.42	.45	-.15	-.12	-.30	.21	-.45	-.33
3 Promotion of behavior change - AN related		1	-.07	.09	-.20	-.51*	-.44	-.20	-.09	.28	-.06
4 Promotion of behavior change – communication quality			1	.77**	.85**	-.08	-.24	-.32	.11	-.33	.08
5 Acceptance - AN related				1	.79**	-.16	-.43	-.38	.18	-.35	-.16
6 Acceptance – communication quality ^a					1	-.04	-.24	-.49	-.26	-.15	.23
7 Current BMI						1	.49	.46	-.03	-.06	.11
8 Lowest adult BMI							1	.69**	.07	-.36	-.08
9 EDE								1	-.14	-.08	.05
10 DAS-4									1	-.72**	-.80**
11 PANAS negative scale										1	.62**
12 Caregiving Stress Scale											1

Note: codes that were rated as >1 in more than two couples are displayed here. ^aOnly rated for partners who displayed acceptance behaviors, thus only 11 couples were included in these analyses.

* $p < .05$, ** $p < .01$

BMI of the patients, the EDE global score, and the partners' caregiver stress. Similarly, the partners' global quality of communications shows a similar pattern of associations with these variables, although the correlations are weaker. Thus, there is notable overlap between the two codes of AN-related acceptance and global quality of communication and their association with other variables; implications for the underlying constructs will be discussed below. Table 3 provides the means, standard deviations, and ranges of the remaining study variables.

Because the severity of the patient's AN could impact the partner's communication about the disorder or directly influence the partner outcomes (relationship satisfaction, caregiver distress, negative affect), it was important to control for AN severity in the analyses and, thus, to decide what index of AN severity was most appropriate to employ. In order to determine which indicator of AN symptom severity should be controlled for when testing the hypotheses, bivariate correlations of the partner outcomes (DAS-4, negative scale of the PANAS, Caregiving Stress Scale) and AN variables (EDE global score, current BMI, lowest adult BMI) were obtained. Only six patients had been hospitalized due to the eating disorder (each either one or two times); thus number of hospitalizations was not further considered in the analyses. No significant correlations between AN symptom severity and partner outcome variables were found (see Table 4). However, the lowest adult BMI and the negative scale of the PANAS were moderately correlated, $r = -.36$. Therefore, the lowest adult BMI was used to control for AN symptom severity in the remaining analyses to test the hypotheses.

Table 3

Descriptive Statistics for Study Variables

Variable	Mean (SD)	Minimum	Maximum
Current BMI	18.86 (2.03)	15.95	23.45
Lowest adult BMI	15.84 (1.22)	13.79	17.59
EDE Global Score	2.71 (1.47)	.55	5.30
DAS-4	12.25 (4.19)	5.00	20.00
Decisional Balance – burden subscale	58.07 (7.82)	47.00	72.00
PANAS negative scale	17.28 (6.28)	10.00	29.00
Caregiving Stress Scale ^a	23.94 (6.88)	14.00	37.00

Note: ^aSubset of 12 items selected for this study

Table 4

*Bivariate Correlations of AN Symptom Severity Variables and Partner Outcome**Variables*

	1)	2)	3)	4)	5)	6)
1) Current BMI	1	.49*	.46*	-.06	.11	-.03
2) Lowest adult BMI		1	.69**	-.36	-.08	.07
3) EDE Global Score			1	-.08	.05	-.14
4) PANAS negative scale				1	.62**	-.72**
5) Caregiving Stress Scale ^a					1	-.80**
6) DAS-4						1

Note: * $p < .05$ (one-tailed); ** $p < .01$ (one-tailed). ^asubset of 12 items selected for this study

Hypothesis Testing

A hierarchical regression approach was used to test all hypotheses. For each regression analysis, AN symptom severity was entered first, followed by the variable of interest in order to test the unique effects of the variable of interest.

Hypothesis 1. The first hypothesis was that lower motivation to change of the patient would be associated with higher caregiver distress, higher relationship distress, and greater negative affect in the partner, while controlling for AN symptom severity. Three separate regression analyses were run to test the hypothesis for each of the partner outcomes. Table 6 in Appendix A provides complete results of the three regression analyses for each of the partner outcomes. While controlling for the lowest adult BMI, the burden subscale of the Decisional Balance scale was not a significant predictor of the PANAS negative scale, the Caregiving Stress Scale, or the DAS-4. These results indicate that the patients' motivation to change alone (while taking the severity of the patients' AN into account) is not associated with the partners' relationship satisfaction, caregiver distress, or negative affect.

Hypothesis 2. In the first part of the second hypothesis, it was predicted that the partners' engagement in AN-related promotion of behavior change will moderate the relationship between the patients' motivation to change and the three partner outcomes, after controlling for AN symptom severity. The complete results of the three regression analyses for each partner outcome variable are provided in Table 7 in Appendix A.

While controlling for the lowest adult BMI, there was no significant interaction effect of the burden subscale of the Decisional Balance scale and AN-related promotion of behavior change predicting the PANAS negative scale ($\beta = -1.44, p > .05$) or

predicting the DAS-4 ($\beta = 4.40, p > .05$). That is, the degree to which the partners attempt to promote AN-related behavior changes of the patient does not function as a moderator of the association of the patients' motivation to change and the partners' negative affect, or of the association of the patients' motivation to change and the partners' relationship satisfaction. Although the latter effect was not significant ($p = .09$), it explained approximately 24% of the variance of the DAS-4.

While controlling for the lowest adult BMI, there was a significant interaction effect of the burden subscale of the Decisional Balance scale and AN-related promotion of behavior change predicting the Caregiving Stress Scale ($\beta = -5.1, p < .05$). The interaction term explained about 32% of the variance in the Caregiving Stress Scale. Thus, the effect of the patients' motivation to change on the partners' caregiver distress depends on the degree to which the partners engage in AN-related promotion of behavior change, and taking this interaction of motivation to change and promotion of behavior change into account allows us to predict about a third of the variance in caregiver distress. Further analyses for examining the nature of the moderation effect are reported below.

The second part of hypothesis 2 described the nature of the hypothesized interaction effects. That is, for couples in which the patient's motivation for change is low, greater engagement in promotion of behavior change by the partner was predicted to be associated with more negative partner outcomes. For couples in which the patient's motivation for change is high, a greater degree of engagement in promotion of behavior change will be associated with more positive partner outcomes.

Given the results of the regression analyses, the interaction term predicting

caregiving distress was probed. Although the interaction term predicting relationship satisfaction was not significant and this result should not be further interpreted, this interaction term was probed as well in order to determine if the general pattern is consistent with the effect found for caregiver distress. Probing the interactions revealed that the patterns of the effects were in line with the hypothesis. First, the interaction effect predicting caregiver distress was examined (see Figure 1). For partners with a higher level of AN-related promotion of behavior change, lower levels of motivation to change (burden subscale of the Decisional Balance scale) were associated with higher levels of caregiver distress (Caregiving Stress Scale). For partners with lower levels of AN-related promotion of behavior change, higher levels of motivation to change were associated with *higher* levels of caregiver distress. Simple slopes were only significant below -1.58 and above 5.97, which is outside of the actual range of scores of 1 through 5 that can be assigned for the observational code of “degree of engagement in promotion of behavior change – AN related”.

Second, to provide some indication of whether the non-significant interaction predicting relationship distress generally followed similar pattern, this interaction was probed as well. Results were consistent with those reported for caregiver distress. For partners with lower levels of AN-related promotion of behavior change, higher levels of motivation to change of the patients were associated with lower relationship satisfaction. For partners with higher levels of promotion of behavior change, higher levels of motivation to change were associated with higher relationship satisfaction. Regions of significance for the simple slopes could not be determined, because the simple slopes were not significantly different from zero. Given the lack of significant findings, these

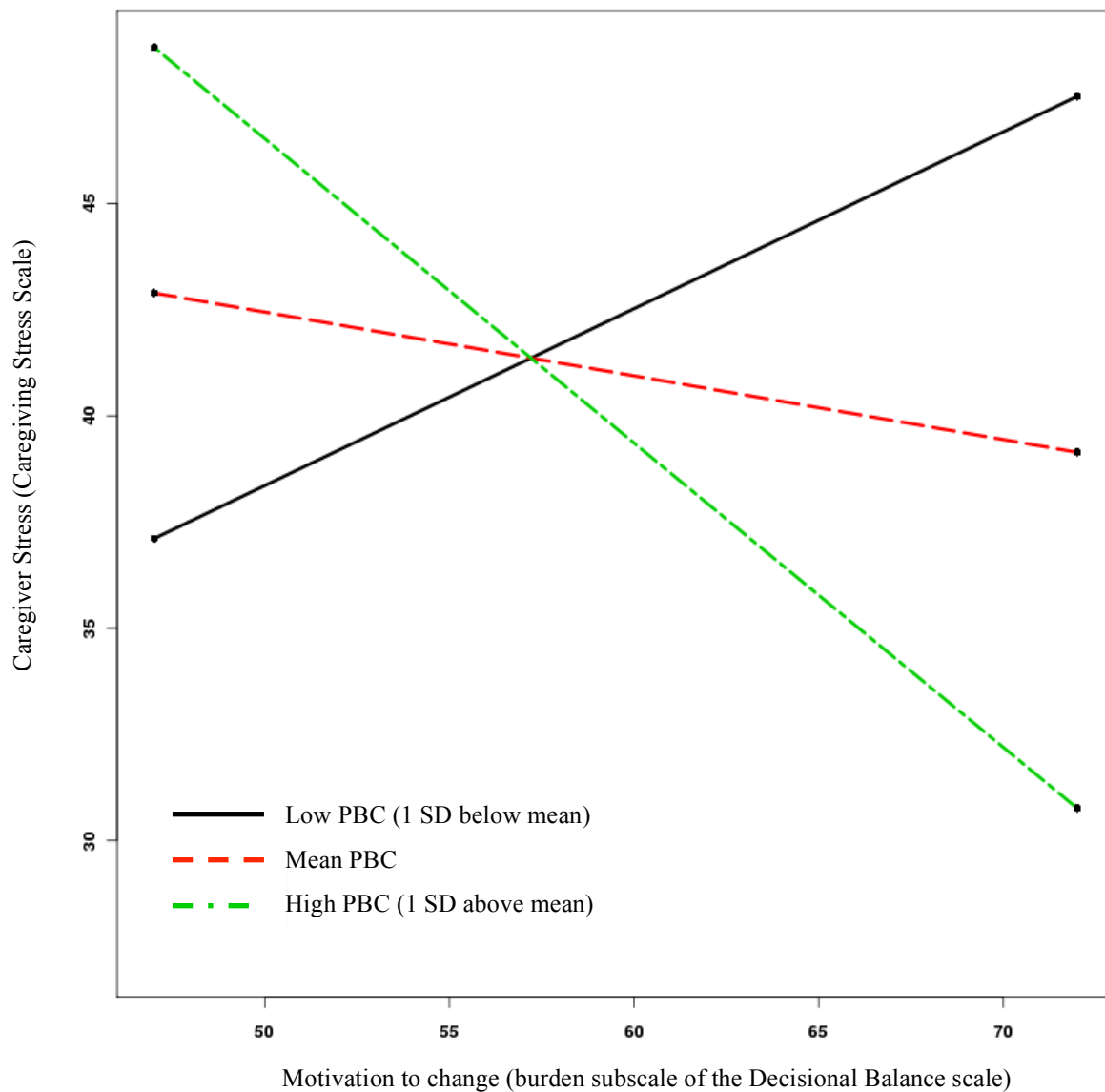


Figure 1. Two-way interactions of the relationship between the patients' motivation to change and the partners' caregiver distress, depending on the partners' degree of engagement in AN-related promotion of behavior change (PBC).

results are illustrative only.

Considering that the interpretation of these results is not intuitive, further analyses were conducted to aid in a better understanding of the meaning of the interaction effects. Specifically, the results that higher levels of motivation to change was associated with more caregiver distress for partners if they engaged in lower levels of AN-related promotion of behavior change was of interest. Even though it was predicted that the partners' behavioral responses in the context of AN (promotion of behavior change) would moderate the association between motivation to change and partner outcomes, it was somewhat surprising that for partners who are engaging in very low levels of promotion of behavior change, higher levels of motivation to change were associated with poorer outcomes (in terms of caregiver distress). It was expected that greater motivation to change of the patients would generally lead to a less negative experience for the partners, because living with the negative consequences of having a partner with AN may be more bearable if the patient seems to be motivated to fight the disorder. Thus, additional analyses were conducted to better understand what factors may be associated with motivation to change. For example, if patients with high motivation to change also tended to experience high levels of negative affect (e.g., because they experience the burden from AN in a very pronounced way), this may explain why high motivation to change may be associated with more negative outcomes for some partners.

Table 5 provides the correlations of the patients' motivation to change and other relevant variables. Notably, motivation to change is not correlated with the measures of negative affect, depression, or anxiety, but it is significantly positively correlated with relationship satisfaction (DAS-4). Motivation to change also is not correlated with any of

Table 5

Bivariate correlations of the patients' motivation to change measure (Decisional Balance – burdens subscale) and other patient variables

	1	2	3	4	5	6	7	8 ^a
1 Motivation to change	1	.27	-.12	.04	.51*	.10	.12	.09
2 Current BMI		1	.49 ⁺	.46	.12	.38	.23	-.08
3 Lowest adult BMI			1	.69**	-.01	.27	.19	.32
4 EDE Global Score				1	-.24	.57*	.31	.39
5 DAS-4 ^b					1	-.38	-.23	-.54
6 PANAS negative scale ^b						1	.73**	.71**
7 BAI ^b							1	.72**
8 BDI ^{a,b}								1

Note. ^aonly available for 12 patients. ^bpatient report. ⁺ $p = .05$ * $p < .05$, ** $p < .01$

the AN severity measures. Thus, there is no easily identifiable factor directly associated with motivation to change that could explain the negative outcomes for some partners of patients with high motivation to change. Possible implications of the findings that patients with higher relationship satisfaction also tend to experience more negative aspects of AN (i.e., have higher motivation to change) are discussed below.

Hypothesis 3. The third hypothesis stated that, while controlling for AN symptom severity, greater engagement in AN-related acceptance behaviors of the partner would be associated with more positive partner outcomes on all three variables. The regression analyses predicting caregiver stress and relationship satisfaction did not show any significant effects of the degree of engagement in acceptance behaviors on these two outcomes (see Table 8 in Appendix A), after controlling for lowest adult BMI. However, the degree of engagement in AN-related acceptance significantly predicted the partners' negative affect and uniquely explained 31% of the variance on the negative scale of the PANAS ($\beta = -.61, p < .05$), above and beyond the effect of lowest adult BMI.

In summary, the partners' relationship satisfaction and caregiver distress do not depend on the degree to which they display AN-related acceptance, but AN-related acceptance is associated with negative affect. That is, while accounting for the effects of AN symptom severity, partners who engage in more AN-related acceptance behaviors tend to experience less negative affect.

Hypotheses 4, 4a, and 4b. These hypotheses predicted that better communication quality would be associated with more positive partner outcomes, while controlling for AN symptom severity. The first part of the hypothesis refers to the global quality of communication, whereas the other two refer to the quality of communication variables

specific to the displayed promotion of behavior change and acceptance behaviors. Each of the three quality of communication variables was tested as a predictor of relationship satisfaction, caregiver distress, and negative affect.

Contrary to the hypotheses, global quality of communication was not a significant predictor of caregiver stress, relationship satisfaction, or negative affect (see Table 9 in Appendix A for complete regression results). However, global quality of communication explained 20% of the variance in negative affect, although the effect was not significant ($\beta = -.49, p = .08$).

Similarly, quality of communication specific to promotion of behavior change was not significantly associated with any of the three partner outcome variables (see Table 10 in Appendix A), although it explained 18% of the variance in negative affect despite the effect not being significant ($\beta = -.44, p = .09$). Quality of communication specific to acceptance also did not significantly predict any of the partner outcomes (see Table 10 in Appendix A). Of note, this analysis was constrained to a smaller subsample because quality of communication specific to acceptance was not rated for the partners who did not display acceptance behaviors.

In summary, there was no association between the quality of communication of the partners with their own relationship satisfaction and caregiver distress, while accounting for AN symptom severity.

Hypothesis 5. The hypothesis could not be tested. None of the partners received a rating of greater than 1 for broad resignation, and only two partners were observed to display low levels of personal resignation (ratings of 1.5 and 2).

Summary of findings. In summary, the first and fourth hypotheses were not

supported, and the fifth hypothesis could not be tested, whereas there was partial support for the remaining hypotheses. The patients' motivation to change, as assessed by the level of burden or disadvantages of having AN they experienced, was not associated with the partners' relationship satisfaction, caregiver distress, or negative affect, as long as partner behaviors were not taken into account. However, the partners' attempts to promote AN-related changes in the patients moderated the association of motivation to change and partner distress. For partners who engaged in AN-related promotion of behavior change to a large degree, motivation to change was negatively associated with caregiver distress. For partners who rarely engaged in AN-related promotion of behavior change, the effect was in the opposite direction - higher motivation to change was associated with higher caregiver distress. In addition, the degree to which partners engaged in AN-related acceptance was also negatively associated with negative affect.

CHAPTER 4

DISCUSSION

The current investigation was one of the first empirical studies using observational data to develop a better understanding of the intimate relationships of couples in which one partner suffers from AN. One of the goals was to identify relevant interpersonal processes and develop an understanding how the patients' motivation to change, the partners' own behavioral responses in this context, and indices of partner distress may be related.

Interpretation of Findings

It was expected that patients' motivation to change would be negatively associated with partner distress, i.e., lower motivation to change would be associated with more negative affect, higher relationship distress, and higher caregiver distress of the partners. This association was expected to be moderated by the degree to which partners attempt to promote AN-related changes towards recovery. Partners who engaged in more acceptance and displayed better communication skills also were expected to experience less distress.

There was no support for the first and fourth hypotheses, but hypotheses two and three were supported for some of the partner distress variables. Broadly speaking, partners tended to be less distressed (i.e., had lower scores when considering negative affect) if they engaged in more AN-related acceptance. Partners also were less distressed if their engagement in AN-related promotion of behavior change was "in sync" with the

patients' motivation to change.

Contrary to the first hypothesis, the patients' motivation to change was not associated with the partners' affect, relationship distress, or caregiver distress. However, as expected, the partners' engagement in AN-related promotion of behavior change moderated the association of motivation to change and caregiver distress. The pattern of results may be similar for relationship satisfaction, although this effect was not significant and it remains subject to future research to determine if an effect would be found if the tests had higher power. The presence of this moderator explains the failure to find a main effect of motivation to change in the prediction of caregiver distress and a similar mechanism could be present for relationship satisfaction, but the interaction effect was not found to be predictive of negative affect. Negative affect was assessed for the past week and might be less stable than caregiver and relationship distress, and more influenced by temporary occurrences in the past week than by motivation to change and promotion of behavior change.

However, there may also be other reasons why motivation to change was not associated with the partner distress variables, regardless of the moderation effect. First of all, other aspects of their relationship, the patient, the disorder, or the partner could be more central than motivation to change in determining levels of distress of the partners. For example, partners might vary in the degree that they perceive AN to be interfering with their life and relationship. This may in turn depend on a number of factors, such as how much the partner knows about the extent of eating disordered behaviors or the patients' distress, which may be very limited for some partners (Van den Broucke & Vandereycken, 1988; Van den Broucke et al., 1995b). In addition, various partners may

differentially experience protective factors, such as social support from extended family or friends (Dimitropoulos, Carter, Schachter, & Woodside, 2008). Second, motivation to change, as measured by the level of “burden” or disadvantages due to AN the patient experiences, could take different forms across patients (e.g., disclosure of motivation, treatment compliance, affect), and, therefore, not have a unitary association with partner distress across couples. In addition, partners also could vary in how they interpret and are affected by different levels of motivation to change.

At this point, these are mostly theoretical considerations and remain subject to future research. However, the interpersonal processes surrounding the experience of the partners are most likely very complex and cannot be explained by a single variable. Although motivation to change alone was not associated with the partner distress variables, it might have different influences on the experience of the partners depending on other factors. This notion is supported by the moderating effect of the partners’ engagement in AN-related promotion of behavior change that was found in this study. Interestingly, promotion of behavior change alone was not associated with the partner outcomes either; it is the interplay of the two variables that matter for the partners’ experience in their role as a caregiver. The results indicate that partners experience more favorable outcomes, the more their level of promotion of behavior change attempts “match” the patient’s motivation to change. Although promotion of behavior change is not dichotomous, the effects can be best discussed in terms of the association between motivation to change and distress for partners who engaged in AN-related promotion of behavior change to a large degree versus partners who did not or rarely engaged in it.

Partners with high AN-related promotion of behavior change experienced more

caregiver distress, the lower the patients' motivation to change. For these partners, engaging the patient in working towards recovery is likely to be an important goal. If the patient is experiencing low levels of motivation to change, this interferes with the partner's primary goal and could negatively affect the partner's relationship satisfaction and experience as a caregiver in various ways. Conflicting goals interfere with effective dyadic coping (Lyons et al., 1998) and may lead to AN being a greater source of everyday conflict between the partners. If the partner makes frequent attempts to promote changes in eating disordered behaviors of the patient, but the patient consistently rejects such efforts, partners also may lose hope that the patient will ever get better. Seeing the patient hold onto AN despite the negative psychological and physical consequences may be very difficult to understand for partners, especially if they consistently try to promote behavior changes in the patient. As a result, these partners might begin to feel more broadly discouraged about the state of their relationship. All these factors may interfere with the partners' sense of being an effective caregiver and their relationship satisfaction to varying degrees. Given the correlational nature of this investigation, the actual paths and direction of the effects remains subject to further research.

On the contrary, higher motivation to change among patients had the opposite effects for partners with high promotion of behavior change. For these partners, the degree to which they attempt to promote AN-related behavior changes was "in sync" with the patient's motivation to change, which likely facilitates the couple's ability to work as a team towards recovery. It is important to note that promotion of behavior change and the partners' quality of communication were not correlated. This means that partners could be very critical when engaging in promotion of behavior change or

generally have poor communication skills, which likely results in negative responses from the patient and may interfere with effective dyadic coping. Thus, it appears that other processes or even merely having a shared goal may be linked with a less aversive experience for the partners.

The opposite pattern of associations was found for partners who engaged in very limited or no promotion of behavior change. Again, for couples who were “out of sync,” partner outcomes were less favorable – partners experienced more caregiver distress if the patients reported higher motivation to change. Whereas the general pattern of the moderation effect was consistent with the predictions, it was somewhat surprising to see the association of motivation to change and caregiver distress for these partners to be opposite, and equally as strong as for partners who seem to put high priority on promotion of behavior change. For these partners, higher motivation to change was actually related to higher caregiver distress for partners, which cannot be easily explained based on the initial theoretical assumptions. However, it seemed possible that higher motivation to change could be associated with a host of negative experiences for the patient, which could in turn affect the partners negatively. For example, if a patient experiences AN to interfere with her life and she is motivated to change, it might still be extremely difficult to overcome the disorder and involve a considerable amount of anxiety, frustration, and other negative emotions. Thus, high motivation to change along with negative affect or mood might negatively affect the partner’s experience as a caregiver, if the partners do not engage in promotion of behavior change that might facilitate effective dyadic coping. Post-hoc analyses were run using measures that assessed patients’ relationship satisfaction, negative affect, anxiety, and depression to

assess this explanation. However, motivation to change was not found to be associated with the latter three variables. Higher motivation to change was positively correlated with the patients' own relationship satisfaction, which again indicates that a stable relationship may be an important motivator for AN patients (Beresin et al., 1989; Hsu et al., 1992; Tozzi et al., 2003), but does not help to explain why partners would be *more* distressed in this scenario.

Whereas the data are not sufficient to explain why this pattern was found, some of the clinical and informal observations of the videotaped interactions of couples in which the partners had the lowest promotion of behavior change and patients had the highest motivation to change give rise to additional hypotheses. It may be that for these couples, the patients are motivated to work against AN, but for some reason the patient, partner, or both perceive this to be the patient's individual problem to undertake. The partner may either be unsure what to do or how to help, and thus feels helpless as a caregiver, or he may have been punished for previous attempts to promote behavior change and now holds back. Helplessness, frustration, and being unable to work as a team with the patient may result in higher caregiver distress. Especially in this situation, the status quo (i.e., a patient who is not motivated to change) may be less distressing to the partners than seeing the patient grapple with recovery attempts, possible slips, and relapses.

The degree to which partners engaged in AN-related acceptance was positively correlated with the partners' quality of communication skills. This is not surprising considering how the construct of acceptance was defined, which will be further discussed below. Consequently, AN-related acceptance and global quality of communication showed similar associations with the partners' negative affect.

The hypothesis predicting less negative affect, and lower relationship and caregiver distress for higher engagement in AN-related acceptance was based on the notion that partners could engage in these behaviors with some success regardless of motivation to change, and that this approach would facilitate greater emotional closeness. However, given that effects were found only for negative affect predicted by AN-related acceptance, a different explanation based on the opposite direction of effects is also possible: A higher level of negative affect may interfere with partners' ability or willingness to show acceptance and validate the patients' struggles with AN. Affect may also be more subject to fluctuation than caregiver and relationship distress, and the display of acceptance behaviors might vary with this fluctuation in affect. The associations of quality of communication and negative affect followed a similar pattern, but were not significant. In the clinical literature on couple therapy, it has often been noted that even couples with generally good communication skills may not be able to use them effectively in the presence of strong negative emotions (Epstein & Baucom, 2002), and it seems likely that this would play out in a similar way for acceptance behaviors. Couple research on this issue often relies on cross-sectional data, but an experimental study on parenting communication after mood induction showed that negative mood subsequently leads to poorer communication quality (Jouriles, Murphy, & O'Leary, 1989). Conversely, it may be a good sign that at least some partners are still able to use good communication and engage in acceptance even if they are less satisfied in their relationship and experience caregiver distress, as the absence of an association between these variables indicated.

The last hypothesis could not be tested due to the very low rate of observed

resignation. Nevertheless, some partners might actually feel helpless or hopeless (c.f., Whitney, Murray, Gavan, Todd, Whitaker, & Treasure, 2005 for accounts of parental caregivers), but they might not express this frequently enough for observational methods to accurately assess resignation.

In summary, it is indeed important to take both the patients' motivation to change and the partners' own behavioral responses in the context of AN into account when trying to understand the interpersonal dynamics of these couples and the experience of the partners. For the associations that were found, it remains to be determined if these are different types of couples (e.g., different constellations of couples with relatively stable motivation to change of the patients), or if longitudinal changes in motivation to change or partner behaviors would lead to changes in the partners' relationship satisfaction, caregiver distress, and affect. Given the cross-sectional nature of this study, the causal associations among the different variables and the direction of the effects remains to be determined (e.g., the partners' behaviors also could influence the patients' motivation to change). Thus, all interpretations can only be made based on theoretical and clinical considerations at this point.

Evaluation of the Observational Coding System

Another major aspect of this study was the development of an observational coding system to measure communication behaviors specific to the context of AN. Overall, the coding system was successfully implemented with good reliability. While more research is needed to further examine the validity of the scales, the initial findings suggest that this is a fruitful strategy for the assessment of context-specific behaviors. Several constructs included in this coding system are traditionally not part of

observational measures for couples, but the findings of this study suggest that it is important to look at communication variables specific to a given population, rather than only taking general aspects of positive and negative communication into account.

The coders were able to use the coding system effectively without revisions of the coding manual, with the exception of the code “engagement in AN-related acceptance.” In general, this is a broader construct than other variables, such as promotion of behavior change, and was more difficult for coders to understand and apply reliably. It appeared that the initial version of the manual was too strict in requiring very specific instances of behaviors described under acceptance which led to very low ratings, although the construct itself is thought to be broader and reflected in the partners’ overall approach to the conversation as well. The guidelines were revised to allow for more global judgments about the partners’ engagement in acceptance based on the coders’ overall impression of the interaction and their understanding of the construct (see the coding manual for a detailed description of the guidelines). After this revision, coders were able to achieve good reliability on this code quickly, and they agreed that face validity of the ratings was improved. However, there was some conceptual overlap of behaviors that would be indicative of good communication skills but could also be displayed in the service of communicating acceptance and validation. While the revision countered the apparent under-rating of the acceptance code based on the initial guidelines, this contributed to the high correlation between the codes “global quality of communication” and “engagement in AN-related acceptance.” It remains to be determined if the codes measure the same construct, or if distinguishing “acceptance” from general communication quality in observational measures is possible and the constructs are merely highly correlated among

partners of patients with AN.

For some of the remaining codes, the range of scores was very restricted. For the codes measuring engagement in AN-unrelated acceptance and promotion of behavior change, and active avoidance of AN-related topics, this seemed to be an accurate reflection of the partners' behaviors during the interactions. On the contrary, the constructs that broad resignation ("hopelessness") and personal resignation ("helplessness") were designed to measure may not be suitable for assessment by direct observation. Thus, resignation might be better assessed through self-report measures, or responses regarding how hopeless or helpless partners feel about AN could be elicited with a different interaction prompt (e.g., to share thoughts and feelings about how they feel about the state of AN and each partner's role). Nevertheless, maintaining the codes in the observational measure could be helpful in clarifying the important distinction between accepting, validating responses, and "giving up."

Clinical Implications

Given the novelty of this research area and the limitations of this study, clinical implications should be interpreted with caution. However, there are some tentative clinical considerations that can be made based on the current study and that should be subject to future research. Traditionally, many couple-based interventions for individual psychopathology and medical illnesses aim to promote mutual understanding, acceptance, and validation between the partners as well as behavioral changes that are needed to overcome the problem (e.g., partner-assisted exposures, medication adherence, general lifestyle changes; Baucom, Porter, Kirby, & Hudepohl, 2012; Martire, Schulz, Helgeson, Small, & Saghafi, 2010; Whisman & Baucom, 2012). While longitudinal

effects of changes in these behaviors on the partner and the patient still have to be determined, clinicians should be mindful of the possibility that the partners' own behaviors influence their own experience of caregiver and relationship distress, and that the nature of this influence may depend on other factors such as the patient's readiness to make the changes the partner is asked to support. For example, if the partner is instructed to engage in more promotion of behavior change, other interventions to counter potential negative effects of engaging in these behaviors on the partner's relationship and caregiver distress could be considered (e.g., increasing external social support, improvement of communication skills).

Limitations

This study also has a number of limitations. The small sample size and cross-sectional data limit possible conclusions and confidence in the results. No causal inferences or definite conclusions about the direction of the effects can be made. More complex models that might reflect the actual interpersonal processes more accurately could not be tested due to the sample size. Furthermore, alpha levels were not adjusted to account for repeated testing of the hypotheses with each of the three partner distress variables due to the low power with such a small sample size. While stricter tests would have increased the confidence in the results, this study served to identify relevant aspects of these couples' interactions that are worth investigating further, with larger samples.

In addition, the participants were treatment-seeking AN patients and their partners. It is unclear if treatment seeking patients are more motivated to overcome AN compared to individuals with AN who do not seek treatment, but possible differences in motivation to change may limit generalizability of the findings. Partners in this study may

also have been more committed to the relationship and to helping the patient, compared to other couples in the community. A notable difference may also be that the partners in the study were aware of the patients' AN, while some research suggests that patients are secretive about their disorder (Van den Broucke & Vandereycken, 1988). Furthermore for all couples, the female partner was the person with AN; all couples were heterosexual, and participants were predominantly Caucasian with the exception of three patients and one partner. Thus, generalizability of the results to other populations may be limited. For example, the interpersonal dynamics might change if the partner is female and/or the patient is male. Although findings are not entirely consistent, emerging research suggests gender differences in the presentation and course of AN (Jones & Morgan, 2010; Lewinsohn, Seeley, Moerk, & Striegel-Moore, 2002; Raevuori, Keski-Rahkonen, Hoek, Sihvola, Rissanen, & Kaprio, 2008; Strober, Freeman, Lampert, Diamond, Teplinsky, & DeAntonio, 2006), and males and females may also approach and experience their role as a caretaker of their partner with AN differently (Kyriacou et al., 2008; Whitney et al., 2005).

Future Directions

Future research should begin to examine the causality and direction of the effects found in this study. A first step would be to determine if motivation to change among patients with AN, their partners' behaviors, and indices of partner distress longitudinally covary within subjects. If changes over time in motivation to change and partner behaviors are associated with changes in partner distress consistent with the findings of the current study, interventions targeting partner behaviors could be an additional factor to examine in future research.

In addition, it would also be valuable to examine how AN treatment outcomes in couple-based interventions for AN are affected by the partners' behaviors. Thus far, couple-based interventions for psychopathology are mostly based on general relationship research and theoretical considerations. Although such interventions have been shown to be effective (Whisman & Baucom, 2012), it is unclear what exactly about the couple-based aspect of the treatment is helpful. The partners' behaviors specific to the context of AN might be part of the mechanisms that affect AN outcomes. If specific behaviors such as the ones described in this study are found to affect AN outcomes, future interventions could capitalize on such findings and address how the couple interacts in a more targeted way in order to facilitate recovery.

However, such intervention efforts would also require a more detailed understanding of the associations between partner behaviors and partner and patient outcomes. A study with a larger sample would allow for examining more complex associations that may be important for both individuals. For example, the current study did not allow for testing possible interaction effects of AN-related acceptance and promotion of behavior change, while controlling for AN severity. However, the couple's experience might be very different depending on the combination of the two behaviors. Outcomes may be facilitated if the partner demonstrates both acceptance and promotion of behavior change, i.e., if partners empathize with the patient's experience, provide emotional support, but also do not make it "easy" for the patient to maintain the eating disorder. This assumption appears to be reflected in the couple-based intervention the couples of the current study participated in (Bulik et al., 2011), and the idea of relying on similar principles (validation and change-oriented strategies) to facilitate recovery also is

found in other treatment models such as dialectical behavior therapy (Linehan, 1992). Along with the interplay of acceptance and promotion of behavior change, the partners' quality of communication during AN-related conversations is likely to affect AN outcomes as well. Some partners may be critical, hostile, or threaten the patient; however, this closely resembles the concept of criticism/hostility in the expressed emotion literature, which has been found to be associated with higher relapse rates and poorer treatment outcomes for patients with eating disorders (van Furth et al., 1996; Zabala et al., 2009). Thus, when examining treatment outcomes as a function of partner behaviors, both interactions of promotion of behavior change and acceptance behaviors along with the quality of communication should be taken into account.

Conclusions

Despite the limitations of this study, the findings are promising and have provided a valuable basis for future research. Couples in which one partner suffers from AN have not been subject to empirical studies in a systematic manner. Currently, the effectiveness of treatments for AN in adults is very limited, and couple-based interventions are an attempt to translate successful family-based approaches that have been found to be effective for adolescents into a format appropriate for adults and their romantic partners. To improve outcomes in terms of recovery from AN and partner distress, it is important to gain a better understanding of how these couples interact and how interpersonal processes affect both patients and partners. The current study represents a first step in this endeavor. The findings suggest that it is a promising approach to study aspects of the couples' interactions that are specific to the context of AN, and that it is indeed important to take the partners' behaviors and distress into account to better understand the

complexity of the interpersonal context of AN.

Appendix A

Table 6

Hypothesis 1 - Regression Analyses Predicting Partner Outcomes from Motivation to Change

Variable	F	R ²	R ² Δ	B	SE B	β	t
a) Caregiver distress	.04	.01					
Lowest adult BMI			.01	.44	1.6	-.08	-.28
Motivation to change			<.01	.01	.25	-.01	-.05
b) Relationship satisfaction	.07	.01					
Lowest adult BMI			.01	.20	.95	.06	.21
Motivation to change			<.01	-.04	.15	-.08	-.28
c) Negative affect	1.97	.23					
Lowest adult BMI			.13	-2.05	1.26	-.40	-1.63
Motivation to change			.10	-.26	.20	-.33	-1.33

* $p < .05$

Table 7

Hypothesis 2 - Regression Analyses Predicting Partner Outcomes from Interaction of Motivation to Change and Promotion of Behavior Change (AN-related)

Variable	F	R ²	R ² Δ	B	SE B	β	t
a) Caregiver distress	1.37	.33					
Lowest adult BMI			.01	-1.11	1.57	-.20	-.71
Motivation to change			<.01	1.29	.61	1.46	2.1
Promotion of Behavior Change			.01	27.46	12.45	4.72	2.2 ^a
Motivation to change x PBC			.32	-.48	.21	-5.10	-2.28*
b) Relationship satisfaction	.93	.25					
Lowest adult BMI			.01	.27	1.01	.08	.26
Motivation to change			<.01	-.73	.40	-1.37	-1.85
Promotion of Behavior Change			.1	-15.09	8.03	-4.26	-1.88
Motivation to change x PBC			.24	.25	.14	4.40	1.86 ^b
c) Negative affect	1.02	.27					
Lowest adult BMI			.13	-1.85	1.50	-.36	-1.24
Motivation to change			.10	.08	.59	.11	.14
Promotion of Behavior Change			.01	7.94	11.89	1.49	.67
Motivation to change x PBC			.02	-.12	.20	-1.44	-.62

* $p < .05$, ^a $p = .05$, ^b $p = .09$

Table 8

*Hypothesis 3 - Regression Analyses Predicting Partner Outcomes from Acceptance**(AN-related)*

Variable	F	R ²	R ² Δ	B	SE B	β	t
a) Caregiver distress	.36	.05					
Lowest adult BMI			.01	-1.00	1.68	-.18	-.60
Acceptance (AN-related)			.05	-1.16	1.45	-.24	-.80
b) Relationship satisfaction	.40	.06					
Lowest adult BMI			.01	.60	1.02	.18	.59
Acceptance (AN-related)			.06	.75	.88	.25	.85
c) Negative affect	4.99*	.43					
Lowest adult BMI			.13	-3.17	1.18	-.62	-2.68*
Acceptance (AN-related)			.31	-2.71	1.02	-.61	-2.65*

* $p < .05$

Table 9

*Hypothesis 4 - Regression Analyses Predicting Partner Outcomes from Global**Quality of Communication (Partner)*

Variable	F	R ²	R ² Δ	B	SE B	β	t
a) Caregiver distress	.05	.01					
Lowest adult BMI			.01	-.35	1.62	-.06	-.22
Global Quality of Communication			<.01	.25	1.55	.05	.16
b) Relationship satisfaction	.14	.02					
Lowest adult BMI			.01	.37	.98	.11	.37
Global Quality of Communication			.01	.43	.94	.13	.46
c) Negative affect	3.12 ^a	.32					
Lowest adult BMI			.13	-2.53	1.22	-.49	-2.07 ^a
Global Quality of Communication			.20	-2.26	1.17	-.46	-1.94 ^b

* $p < .05$, ^a $p = .06$, ^b $p = .08$

Table 10

Hypothesis 4a and 4b- Regression Analyses Predicting Partner Outcomes from Quality of Communication specific to Promotion of Behavior Change/Acceptance

Variable	F	R ²	R ² Δ	B	SE B	β	t
a) Caregiver distress	.06/ .31	.01/ .07					
Lowest adult BMI			.01/ .04	-.35/ -.87	1.60/ 2.12	-.06/ -.14	-.22/ -.41
Quality of Communication			<.01/ .04	.34/ 1.68	1.54/ 3.04	.06/ .19	.22/ .55
b) Relationship satisfaction	.14/ .70	.02/ .15					
Lowest adult BMI			.01/ .12	.34/ .93	.97/ 1.05	.10/ .30	.35/ .88
Quality of Communication			.01/ .03	.43/ -.83	.93/ 1.51	.13/ -.19	.46/ -.55
c) Negative affect	2.93 ¹ / 3.78 ^b	.31/ .49					
Lowest adult BMI			.13/ .39	-2.38/ -3.27	1.22/ 1.22	-.46/ -.70	-1.96 ^b / -2.68*
Quality of Communication			.18/ .10	-2.17/ -2.17	1.17/ 1.75	-.44/ -.32	-1.85 ^a / -1.24

Note: Separate analyses were run for each of the behavioral dimension, first numbers stem from analyses including PBC communication quality, second numbers from analyses including ACC communication quality. Communication quality was only rated for partners who displayed ACC, thus only 11 couples were included in these analyses.

* $p < .05$, ^a $p = .09$, ^b $p = .07$

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