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# A Dyadic Analysis of Couple Attachment Behaviors as Predictors of Dietary Habits and Physical Activity Levels

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A Dyadic Analysis of Couple Attachment Behaviors as Predictors of Dietary Habits and Physical  
Activity Levels

Stephanie Young

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of

Master of Science

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School of Family Life  
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## ABSTRACT

### A Dyadic Analysis of Couple Attachment Behaviors as Predictors of Dietary Habits and Physical Activity Levels

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Master of Science

While there is substantial evidence that marriage impacts health, no studies have explicitly analyzed the association between attachment behaviors and health practices. This study examines the relationship between couples' attachment behaviors and health practices, as measured by physical activity levels and dietary habits. Couple data was analyzed from the RELATE database (n= 4,957 couples). An Actor Partner Interdependence Model, using a multinomial logistic regression, was used to examine the relationships between attachment behaviors and health practices, as measured by activity level and dietary habits. Results for actor paths indicate that wives' own attachment behaviors significantly influence their own health practices. Husbands' attachment behaviors are not significantly related to their own health practices. Results also show no significant partner paths for either spouse. Clinical implications for treating women who present with health problems are discussed, as are directions for future research.

Keywords: attachment, diet, exercise, health, couple therapy

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## Introduction

Positive health practices, which are defined as behaviors that protect, promote, or maintain health (McNicholas, 2002), have a significant effect on nearly every aspect of life. For the purposes of this study, the term “health practices” is used to refer to an individual’s dietary habits and physical activity levels. Poor health practices (i.e. physical inactivity and unhealthy dietary habits) are related to one’s quality of life, mental health, and ultimately, his or her longevity (Bryan, Hutchison, Seals, & Allen, 2007; Toobert et al., 2003). The number of premature deaths that result from poor health practices portrays the devastating impact these decisions can have. For example, Pate et al. (1995) estimate that approximately 30% of total cancer deaths are related to physical inactivity and poor dietary habits. Additionally, when taking both cardiovascular disease and cancer into consideration, low levels of physical activity and poor dietary habits contribute to as many as 250,000 premature deaths per year. Despite the devastating consequences of poor health practices, they continue to rise (Hernandez-Hons & Woolley, 2012).

Poor health practices not only impact the individual experiencing them, but they have substantial economic significance as well. For example, obesity, which often results from poor health practices, is related to the development of cardiovascular disease, diabetes, stroke, and numerous types of cancers (Finkelstein, Ruhm, & Kosa, 2005). With over 78 million adults in the United States who suffer from obesity, this disease alone is estimated to account for 400,000 deaths annually, and costs approximately \$147 billion each year in healthcare expenses (Centers for Disease Control and Prevention [CDC], 2012). Given that much of the costs associated with poor health practices are financed through taxpayers (Vo & Goldstein, 2013), they have a profound impact on both the individuals they afflict, as well as society at large.

Many of the consequences of poor health practices could be avoided through the implementation of positive health practices. Research suggests, however, that even though individuals are generally informed regarding positive health practices, simply being aware of what is beneficial for one's health is less influential on actual behavior than other factors such as attitude and level of emotional distress (Hollis, Carmody, Connor, Fey, & Matarazzo, 1986). This is evidenced by the fact that in modern, affluent societies, the diseases causing the greatest mortality and morbidity are strongly determined by personal health practices (Walsh, 2011), suggesting that individuals who are generally aware of the benefits of positive health practices fail to engage in them. Given that personal health practices are associated with multiple negative effects, it is important to identify the factors that influence them.

One important factor related to health practices is attachment (Hubbard, Muhlenkamp, & Brown, 1984; Koball, Meers, Storfer-Isser, Domoff, & Musher-Eizenman, 2012; Orzolek-Kronner, 2002). For many adults, marriage serves as the main source of attachment (Sandberg, Busby, Johnson, & Yoshida, 2012), suggesting that the marriage relationship can have a powerful impact on one's health practices. This is supported by research that indicates that whether a marriage is beneficial or detrimental to one's overall health is more dependent upon the quality of the marital relationship than one's marital status (Burman & Margolin, 1992; Gallo, Troxel, Matthews, & Kuller, 2003; Smith et al., 2011; Stephens, Rook, Franks, Khan, & Iida, 2010; Waite & Gallagher, 2000).

Examining the presence of attachment behaviors offers one possible method for understanding the variety of health outcomes for people who are married because they provide a means for studying the particular actions in a marriage relationship that make it more satisfying and thus, more beneficial to one's health (Feeney & Ryan, 1994; Meuwly et al., 2012). However,

the majority of research examining marriage and health focuses on indicators of health such as cardiovascular risk (Gallo et al., 2003), heart rate (Smith et al., 2011), and stress responses (Burman & Margolin, 1992), not health practices. Similarly, studies concerning attachment and health practices only consider attachment style, rather than attachment behaviors. Thus, a review of the extant literature revealed no known study focusing on attachment behaviors and their influence on health practices. Because of the immense emotional and economic costs associated with poor health practices, it is imperative to increase understanding regarding how specific behaviors within the marriage relationship can contribute to improved health practices. The purpose of this study is to explore the role of attachment behaviors in the marital relationship and their influence on health practices, as measured by dietary habits and physical activity levels.

## **Review of Literature**

### **Theoretical Rationale**

Both attachment and social support theories provide a theoretical foundation for the notion that attachment behaviors in marriage may impact health practices. Attachment theory, which was developed from the research and observations of Bowlby (1969) and Ainsworth (1973), emphasizes the importance of forming secure attachments with others. Those who experience secure attachment enjoy a sense of connection and companionship with others, where a spouse is attuned to the needs of his or her partner and is able to respond in effective and meaningful ways.

When a spouse feels securely attached to his or her partner, it means that he/she perceives her/him as being accessible, responsive, and engaged (ARE; Sandberg et al., 2012). Accessibility is conceptualized as being available; it takes place when a spouse reaches out to his/her partner emotionally, physically, or mentally and the partner is ready to respond. Responsiveness is

perceived as the ability to react or reply to the partner's reaching out (Feeney & Thrush, 2010). Engagement is the culmination of accessibility and responsiveness; it occurs when a distressed partner presents specific requests for closeness and connection in a way that allows the other partner to respond and the other partner reaches out in sensitive, comforting, and soothing ways that meet the emotional needs of their partner (Johnson, 2004). These behaviors result in increased connection between partners, creating a secure attachment in the relationship and providing a safe haven and secure base for spouses to rely upon or turn to (Sandberg et al., 2012). Securely attached relationships affect health generally by protecting individuals against the risks associated with feelings of isolation (Kiecolt-Glaser & Newton, 2001) and by serving as a buffer against stress (Johnson, 2003).

While attachment impacts health generally, a secure attachment in marriage could affect a spouse's health specifically by influencing his or her health practices. For example, those in a securely attached romantic relationship might be more motivated to engage in positive health practices in an attempt to ensure good health and increased longevity (Pate et al., 1995); factors that would allow individuals to continue to be a source of support and connection for their spouse. Also, because those who are securely attached want to help a spouse feel supported in his or her emotional and attachment needs (Johnson, 2004), a spouse might engage in beneficial health practices in order to offer support to a partner who is trying to adopt positive health practices, either from medical necessity or a desire to be healthier. Secure attachment could also allow a spouse to offer support in a caring, non-critical way (Sandberg et al., 2012) that would influence behaviors impacting the health practices of his or her partner. In essence, secure attachment can help a spouse to either be supportive or feel supported in implementing or continuing positive health practices.

The concepts proposed by attachment theory regarding health and relationships are also sustained by social support theory. Social support theory proposes that positive, interpersonal relationships can serve as a buffer against life stressors (Cohen & McKay, 1984). Considering that social support theory suggests that individuals are able to assist others with the vexing parts of their lives, being in a relationship characterized by secure attachment would facilitate a spouse being able to offer and/or receive support. Three of the components of social support theory – the stress and coping perspective, the social constructionist perspective, and the stress-support matching hypothesis – all offer insight as to how social support might impact one's health (Lahey & Cohen, 2000). Additionally, attachment theory, and its conceptualization of secure attachment, offers an explanation for the way in which interpersonal relationships might be a source of support.

The stress and coping perspective suggests that relational support can reduce the effects of stressful experiences on health (Lahey & Cohen, 2000). If this concept is accurate, one would expect that those who receive social support would show a weaker correlation between the amount of stress and health problems they experience than those who receive less social support (Lahey & Cohen, 2000). This concept is supported by numerous studies that found that satisfactory marriages positively impact health (e.g. Gyll, Cutrona, Burzette, & Russell, 2010; Kiecolt-Glaser & Newton, 2001; King & Reis, 2012; Waite & Gallagher, 2000). Additionally, research has found a positive relationship between social support and positive health practices (e.g. Hubbard et al., 1984).

The social constructionist perspective also offers insight as to how social support might impact one's health practices. This perspective proposes that support influences health by promoting self-esteem and self-regulation, regardless of the presence of stress (Lahey & Cohen,

2000). As evidenced by Muhlenkamp and Sayles (1986), there is a positive correlation between health practices and self-esteem. Research also shows that self-esteem alone is less influential on health practices than attachment style (Huntsinger, 2004), suggesting that a relationship wherein self-esteem is strengthened is an essential part of positively impacting health practices.

The stress-support matching hypothesis proposes that support is more likely to predict outcomes when the support is matched to the demands of the stressor (Cohen & McKay, 1984). This perspective portrays the importance of secure attachment in establishing a sense of support in a marriage. If a couple is in a secure relationship, they will be attuned to the specific needs of their spouse and will know how to offer the needed support in a way that is meaningful for the spouse. In this manner, both social support and attachment theories provide a rationale for the expectancy that spouses could shape one another's health practices.

### **Health Practices and Health**

One important health practice that is significantly connected to an individual's overall health is dietary habits. Studies have found that poor dietary habits negatively impact health, while positive dietary habits benefit health. For example, the American diet (which is characterized by the overconsumption of cholesterol, fat, calories, and salt) is associated with the development of major chronic degenerative diseases (Hollis et al., 1986). On the other hand, beneficial dietary habits (i.e. eating fruits and vegetables) are associated with positive health outcomes, such as reduced cardiovascular mortality and the incidence of myocardial infarction and stroke (Gillman, 1996). These findings highlight the powerful impact that dietary habits can have on one's health.

Similar to the effects of dietary habits, individuals' physical activity levels can have a profound influence on health. Regular physical activity has been linked to the prevention of

cardiovascular disease, diabetes, and numerous types of cancer, such as those of the colon, breast, endometrium, and prostate (Bryan et al., 2007; Walsh 2011). In contrast, consistent physical inactivity is a key factor relating to a number of physical ailments, as well as being predictive of the development of psychological illness. Such illnesses include depression, anxiety, eating, addictive, and body dysmorphic disorders (Sacco et al., 2007; Walsh, 2011). The impact of physical inactivity on mental health is of particular concern because it is costly when individuals engage in behaviors that compromise their mental well-being (e.g. Druss, Rosenheck, and Sledge, 2000).

While the impact of health practices on one's health are clear, there is a limited amount of research that has focused on examining specific factors that influence health practices, such as dietary habits and level of physical activity. There is, however, ample research identifying factors that impact one's overall health (e.g. odds of survival once a disease has been diagnosed, recovery from illness, immune system functioning; Waite & Gallagher, 2000). Because of the gap in the extant literature, many of the studies referenced in this manuscript refer to relational factors that influence overall health and do not focus specifically on health practices. These studies provide a foundation for understanding how some of the same factors that influence one's health may also influence an individual's health practices.

### **Relationships and Health**

Numerous studies show that supportive social and familial relationships are closely tied to health benefits, whereas aversive relationships and lack of support are linked to impaired health. Indeed, research shows that social and familial relationships can either benefit or impair one's health (King & Reis, 2012). Among college freshman, for instance, perceived difficulty in the parental relationship predicted weight gain for men (Holm-Denoma, Joiner, Vohs, &

Heatherton, 2008). In another study of high-hostile participants, individuals who were in warm, committed, and supportive relationships presented with fewer health problems than those in lower quality relationships (Guyll et al., 2010). Studies also show that isolation and aversive social relationships impair health, whereas supportive social relationships are associated with health benefits (Holm-Denoma et al., 2008; Meuwly et al., 2012).

### **Marriage as a Predictor of Health**

The marriage relationship, which often serves as the primary relationship for adults, is of particular importance in examining the connection between health benefits and relationships. In some studies, marriage has been shown to be a factor in improving health. For example, research has found that marital status is related to increased odds of survival once a disease has been diagnosed (Waite & Gallagher, 2000). Additional research shows that married individuals experience much lower morbidity and mortality rates than their unmarried counterparts across an array of health problems, including cancer, surgery, and heart attacks (Kiecolt-Glaser & Newton, 2001). On the other hand, some studies suggest that positive health practices are likely to decrease and weight gain is more likely to occur simply through virtue of being married (Gneezy & Shafrin, 2009).

Despite these seemingly contradictory findings regarding marriage and health, one explanation for the variance in marital status and health outcomes is found in examining the quality of the marriage. Research supports this notion, showing that those individuals who were in a troubled marriage were less healthy than their unmarried counterparts (Kiecolt-Glaser & Newton, 2001). These findings emphasize the importance of examining the quality of the marriage relationship, and considering more than simply an individual's marital status, as an



essential element in determining whether a marriage promotes or discourages positive health practices (King & Reis, 2012).

It appears that satisfying marriages are related to an individual's well-being on a number of levels (King & Reis, 2012). For instance, one study examining marital satisfaction as a predictor of cardiovascular risk found that women in highly satisfying marriages show a health advantage compared to participants who reported moderate or low marital satisfaction (Gallo et al., 2003). These researchers postulated that their findings were a result of the protective health effects offered through supportive relationships. Another study found that men who underwent coronary artery bypass surgery and received greater spousal support used less pain medication, had a faster discharge from the surgical intensive care unit, and spent fewer total days hospitalized than those who received less spousal support (Kiecolt-Glaser & Newton, 2001).

Research findings not only validate the benefits of a highly satisfying marriage, but they have also revealed the detrimental effects a marriage can have on health when the marriage is characterized by low levels of satisfaction. For instance, Kiecolt-Glaser et al. (1987) found that when a marriage has become adequately abrasive, an actual disagreement is not necessary to cause heightened cardiovascular responses. By simply recalling a marital conflict, women who reported lower marital satisfaction showed higher systolic blood pressure and heart rate responses than those with higher marital satisfaction. These researchers also found that lower marital quality proved to be a significant predictor of poorer immune functioning.

Substantial evidence exists suggesting that marital distress is a significant risk factor for increased health problems (Gallo et al., 2003; Kiecolt-Glaser et al., 1987; Sandberg et al., 2013). Marital conflict has been linked to a number of health problems, including increased heart rate, heightened blood pressure, the release of stress hormones, inflammatory factors in the immune

system, and suppression of other immune components. If these responses are experienced repeatedly, they can eventually result in the development of life-threatening diseases (Smith et al., 2011). If a marriage is discordant and distinguished by interactions that lead to stress responses, it not only lacks the necessary support to protect against stress, but it could actually deteriorate one's health by increasing stress responses (Burman & Margolin, 1992). Conversely, the effects of automatic stress responses can be moderated through the presence of social support, such as a positive marital relationship (Kiecolt-Glaser et al., 1987). Consequently, understanding the quality of a marriage is crucial because it provides insight as to whether it would have a positive or negative impact on one's health.

### **Attachment**

Attachment is one means for understanding how and why a marriage is satisfying or not (Sandberg et al., 2012). Individuals experience either secure or insecure attachment in romantic relationships and research shows that these attachment styles significantly impact health (e.g. Meuwly et al., 2012). Secure attachment, which is characterized by trust and constructive approaches to resolving conflict, leads to relationship satisfaction. When one does not experience secure attachment, his or her relationship is influenced by one of two insecure attachment styles: avoidant or anxious (Bowlby, 1969).

Low levels of intimacy, commitment, and care generally characterize an avoidant attachment style. In contrast, anxious attachment is portrayed by dependency and often results in conflict and low relationship satisfaction (Feeney & Ryan, 1994). Individuals whose relationships are characterized by insecure attachment styles can experience feelings of isolation and loneliness because they perceive others as being either unaware or uncaring toward them (Johnson, 2004).

### **Attachment Style and Attachment Behaviors**

While the extant literature examining attachment and health largely focuses on attachment styles, research suggests that specific behaviors are an essential part of forming secure attachment bonds (Feeney, 2008; Gottman, Coan, Carrere, & Swanson, 1998; Sandberg et al., 2012). These behaviors are characterized by accessibility, responsiveness, and engagement, which were described previously. In marriage, these behaviors might include actions such as being available and listening, or confiding in one's spouse and being able to easily get a spouse's attention (Sandberg et al., 2012). Such behaviors are conceptualized as attachment behaviors; when exhibited by spouses, they are significantly related to marital satisfaction and attachment security (Banse, 2004). In an effort to identify how specific behaviors in the marriage relationship impact health practices, this study focuses on attachment behaviors rather than attachment styles. Because of the lack of research regarding attachment behaviors, however, the studies reviewed focus on either attachment styles or overall attachment and its impact on health.

### **Attachment Style and Health**

Feelings of loneliness and isolation, which often result from both anxious and avoidant attachment styles, are related to a number of health problems. For instance, those individuals who encounter greater loneliness have been shown to experience accelerated physiological aging and increased cardiovascular health risk in young adulthood. The impact of isolation on health is so significant, that an individual's loneliness can actually be used to predict morbidity and mortality (Raque-Bogdan, Ericson, Jackson, Martin, & Bryan, 2011). In fact, epidemiological studies have shown that social isolation constitutes such a major health risk, that it has statistical effect sizes comparable to those of other substantial health-risk factors, such as smoking, blood

pressure, blood lipids, obesity, and physical inactivity (Kiecolt-Glaser & Newton, 2001). These findings draw attention to the key role that attachment plays on an individual's physical health.

Additional studies support the notion that attachment style is directly linked to health. For example, research studying individuals who suffer chronic pain examined the relationship between the amount of pain experienced and attachment style. Those with insecure attachment reported nearly twice the prevalence of chronic, widespread pain as those with secure attachment (Kratz, Davis, & Zautra, 2012). Not surprisingly, insecure attachment is also related to higher health care utilization among both healthy individuals and those with chronic pain (Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003). While these findings portray the effects of insecure attachment in general, both avoidant and anxious attachment styles include their own unique health risks.

Avoidant attachment, which is characterized by not reaching out to others and valuing independence over relying upon available relational support, has been linked to a number of poor health outcomes. For example, findings show that diabetics who have an avoidant attachment style are at greater risk for poorer health because they adhere less to treatment plans than their securely attached counterparts (Rosenberg & Shields, 2009). Avoidant attachment has also been connected to multiple mental and physical health difficulties, including depressive symptoms, reported pain severity, and functional recovery from chronic fatigue and fibromyalgia (Hammill, 2010; Mcevoy, 2005; Reis & Grenyer, 2004; Tremblay & Sullivan, 2010).

Anxious attachment, which consists of being overly dependent and wanting to be closer to others than they desire, is also linked to diminished health. For example, anxiously attached individuals experience more frequent symptoms of pain and poorer health compared to those with secure attachment (Rosenberg & Shields, 2009). A study examining women who underwent

the Trier Social Stress Test found that following the test, women who were more anxiously attached benefited less from their partner's positive dyadic coping. These women also experienced elevated cortisol levels that lasted longer than the cortisol levels found in less anxious women (Meuwly et al., 2012).

### **Attachment and Health Practices**

Part of the influence that attachment has on health is also evidenced in the role that it plays on an individual's health practices. For instance, multiple studies have found an association between a person's emotional state and their nutritional practices. This is evidenced by research showing that a lack of connection and engagement has been found to impact dietary habits. In one study, eating in response to depression, loneliness, and anxiety was associated with lower nutrient intake and serum levels, elevated serum cholesterol, and higher blood pressure (Hollis et al., 1986). Another study found that both normal weight and overweight individuals eat more when they feel lonely or bored (Koball et al., 2012). These studies depict the relationship between individuals' emotional state and the dietary habits they engage in, suggesting that a person may deal with negative emotions (i.e. rejection, anxiety, loneliness) through food.

Research also suggests a possibility of attachment-related behaviors contributing to the phenomenon of emotional eating. Emotional eating occurs when food is used to satisfy emotional needs. Orzolek-Kronner (2002) explained that the physical hunger experienced by a person with disordered eating serves as a metaphor for the emotional hunger they experience in desiring closeness with others. In a study examining the dietary habits of obese women, it was found that these women had experienced a history of rejection while attempting to gain emotional closeness. Such experiences led to their turning to alternative sources of comfort and closeness that are less risky than human relationships, such as food (Hernandez-Hons &

Woolley, 2012). Thus, emotional eating, and the obesity which often results, become a symptom of insecure attachment and a way to fill the void created by a lack of securely attached relationships with others.

While numerous studies provide evidence for the significant role of attachment on nutritional practices, we could find no study published to date explicitly examining the link between attachment and physical activity levels. One study examined the relationship between attachment style and overall health practices (i.e. alcohol consumption, exercise, dietary habits, and sleep) for young adults. In this study, individuals with secure attachment reported better health behaviors than those with an insecure attachment style (Huntsinger, 2004). Two additional studies showed that spousal support is connected to physical activity levels (Hong et al., 2005; Khan, Stephens, Franks, Rook, & Salem, 2012). Spousal support, which includes efforts to sustain healthy behaviors (e.g. a spouse praising the healthy behaviors of his or her partner), may be related to facilitating secure attachment, but these studies did not explicitly examine the relationship between attachment and level of physical activity. Additionally, the ability to generalize these results is limited because participants were either cardiac patients or had diabetes.

### **Current Study**

A strong groundwork has been laid by previous studies investigating attachment styles and one's overall health. The handful of studies examining the influence of attachment on one's health practices show a strong link between these two factors, particularly the significant impact of secure attachment on positive health practices. Despite the work of previous research, there is little information regarding attachment behaviors and health practices. As a result, part of the unique contribution of this study is to examine the influence of attachment behaviors on health

practices. Additionally, the few studies examining attachment and health practices used participants with specific health problems (e.g. diabetes), so a further contribution of this study includes using a sample that is more representative of the general population. The other purpose of this study is to determine if certain attachment behaviors in the marriage relationship are predictive of health practices. Effects for both self and partner are expected because if individuals receive and provide attachment behaviors in a marriage, they are more likely to feel securely attached, and thus, more likely to be motivated to engage in beneficial health practices (Hong et al., 2005; Huntsinger, 2004). Drawing from previous work, the current study hypothesizes the following relationships to exist between husbands and wives, for both self and partner effects:

H1: One's own low levels of attachment behaviors will be associated with a higher probability of having a poorer diet and lower levels of physical activity.

H2: One's partner's low levels of attachment behaviors will be associated with a higher probability of having poorer diet and lower levels of physical activity.

### **Control Variables**

Research suggests that a number of demographic variables also influence health practices. In addition to examining the relationship between attachment behaviors and lifestyle choices, certain variables will be controlled for their influence on the outcomes being examined. Numerous variables have been found to impact health practices. One of these factors is age, as research shows that there is a positive association between age and healthy dietary habits (Johansson, Thelle, Solvoll, Bjørneboe, & Drevon, 1999). Research also shows that the more educated individuals are, the more likely they are to have positive health practices (Leganger & Kraft, 2003). Level of socio-economic status (SES) is also related to health, where lower SES is

linked to poorer health practices (Jeffery, 1996; Slater, Lorimor, & Lairson, 1985). Relationship length was also controlled for because research suggests that the longer a couple is married, the more likely they are to be healthy (Zhu & Gu, 2010). Additionally, religion was included as a control because it has been found to influence health practices, where greater religiosity is associated with better health practices (Koenig, King, & Carson, 2012).

## **Method**

### **Participants**

The analytic sample includes couples who volunteered to complete the Relationship Evaluation Questionnaire (RELATE; Holman, Busby, Doxey, Klein, & Loyer-Carlson, 1997). The data was paired for couples (n=4,957 couples). Participants consist of couples that are either in their first marriage or are remarried. In general, participants included Caucasian, Christian couples who had been married about 5 years. The sample consisted largely of couples who were in their 30's and had completed at least some college (see Table 1 for sample demographics).

### **Procedure**

The university's Institutional Review Board approved this project. The data for this study were taken from the RELATE Questionnaire, which was developed in 1997 (Holman et al., 1997). Participants were recruited through various forms of advertising as well as referrals from professors, researchers, and therapeutic professionals. The assessment was accessed online where participants answered questions regarding perceptions of themselves and their partners in four main domains: individual, couple, family, and social. Upon completion of the survey, participants are offered a printout that summarizes their responses. Couples are charged \$40 to view their results.



For the purposes of this study, scales related to attachment behaviors, along with measures assessing dietary habits and physical activity levels, will be included. The measures included in RELATE have withstood rigorous validity and reliability testing, demonstrating good test-retest and internal consistent reliability and content, construct, and concurrent validity (Busby, Holman & Taniguchi, 2001). Most of the measures scored between .70 and .90 for internal consistency and 2 test-retest samples, including a test-retest of a Hispanic version. Investigation of construct validity showed that 92% of the items loaded on the correct subscale and further examination of overlap showed appropriate correlations for similar items while still remaining distinct (range between .45 and .65). In order to measure concurrent validity, measures of RELATE have been compared with scales from the Revised Dyadic Adjustment Scale (RDAS; Busby, Crane, Larson, & Christensen, 1995). Every subscale that was compared showed strong, positive correlations.

## **Measures**

**Attachment.** This study will focus on the RELATE items that measure attachment behaviors, dietary habits, and physical activity level. The RELATE scales measuring attachment behaviors consist of a subscale in the RELATE survey, The Brief Accessibility, Responsiveness, and Engagement Scale (BARE; Sandberg et al., 2012). Participants respond to statements from three subscales that measure both individuals' and his/her partners' accessibility, responsiveness, and engagement (Cronbach's alpha for males was .68, and for females was .74). The scores from each of the three domains are used as indicators of a latent construct assessing the degree of attachment behaviors. Partial measurement invariance was confirmed for men and women for BARE (i.e., the factor loadings were equal for both sexes). Responses to statements are on a five-point Likert scale, where answers vary from "Never True" (1) to "Always True" (5). Sample

items from these scales include: “It is hard for me to confide in my partner” and “I am rarely available to my partner,” as well as items that were reversed scored such as “I listen when my partner shares her/his deepest feelings” and “I am confident my partner reaches out to me.” The BARE, with test-retest scores ranging from .60 to .75, shows high concurrent reliability and validity (Sandberg et al., 2012). Items were scored such that higher scores indicate less secure attachment behavior.

**Physical Activity Level.** This is a single-item, self-rated response. For activity level, respondents were asked to choose which of the following four statements best describes their activity level: “I am not very active (I do not exercise regularly or participate in a regular physical activity);” “I am somewhat active (I occasionally exercise and participate in a few physical activities);” “I am active (I exercise a couple times a week and often participate in physical activities);” and “I am very active (I exercise at least 3 times a week and often participate in physical activities).”

**Daily Eating Habits.** This is also a single-item, self-rated construct. For this measure, respondents were asked to select from 4 statements that best represented their daily eating habits: “I am not particularly careful about what I eat (i.e., my diet commonly includes high fat or sugar items, and/or irregular meals, and/or insufficient amounts of fruits and vegetables);” “I am somewhat careful about what I eat (i.e., my diet sometimes includes high fat or sugar items, and/or irregular meals, and/or insufficient amounts of fruits and vegetables);” “I am careful about what I eat (i.e., my diet rarely includes high fat or sugar items, and/or irregular meals, and/or insufficient amounts of fruits and vegetables);” and “I am very careful about what I eat (i.e., my diet almost never includes high fat or sugar items, and/or irregular meals, and/or insufficient

amounts of fruits and vegetables).” Research has indicated that results from self-report questionnaires and actual behaviors are highly correlated (Crane & Christenson, 2012).

From the responses provided regarding eating habits and activity level, four categories were formed. This was done by collapsing the four possible responses and creating a “poor” and “high” group for diet and a “low” and “high” group for activity level. Respondents who said they were not very or only somewhat active were combined to create the low group, while the high group consisted of those who reported that they were active or very active. The initial four groups for physical activity were collapsed into two groups because the majority of participants (1,690 participants) reported that they were either somewhat active or active, while comparatively few participants reported that they were either not very active or very active (982 participants).

The same procedure was performed for participant responses regarding daily eating habits, with not those who rated themselves as either not careful or somewhat careful about diet being placed in the poor eating habits group and those who reported that they were either careful or very careful about diet being combined to form the good diet group. Similar to participants’ reports of physical activity, the initial subsets of groups for daily eating habits were also collapsed because the majority of participants (2,167 participants) were either somewhat careful or careful about their diet, while significantly fewer participants reported that they were either not particularly careful or very careful with their eating habits (506 participants). Then, with the collapsed groups, the two groups generated for activity level were cross-tabulated with the two groups formed for eating habits to create the four categories used in the analysis: poor diet/low activity, poor diet/high activity, good diet/low activity, and good diet/high activity (see Table 2).

**Controls.** Age was assessed for with a fill-in-the-blank question. Income was assessed for through a single-item, self-rated construct, where respondents chose from 11 possible answers. Responses ranged from “None” to “\$300,000 or above,” with responses ranging between these two options. For participants’ reported household size, the mid-point of the income range (i.e. if respondents selected “\$80,000-99,999” then \$90,000 was used as the mid-point range) was divided by the 2013 federal poverty level for participants’ specified household size (U.S. Department of Health and Human Services, 2013). This calculation provided an income-to-needs ratio, which was included as a socio-economic status control.

All other variables used a single-item, self-rated construct with varying possible responses for participants to choose from. For education, respondents were asked to choose an answer from 9 choices that represented their level of education, ranging from less than high school to a completed graduate or professional degree. For length of time married, participants selected one of 11 options, which ranged from 0-3 months to more than 40 years. Participants indicated their religious affiliation through selecting from a list of options. Possible responses include “Catholic,” “Protestant (Methodist, Lutheran, Episcopalian, Baptist, etc.),” “Jewish,” “Islamic,” “Latter-day Saint (Mormon),” “Buddhist,” “Hindu,” “Sikh,” “Other (please specify),” or “None.”

Some religious affiliations had very few participants who self-identified as belonging to that religion, so the reported demographics for some of the religions listed above were combined with the “Other” category. In addition, because of the large Latter-day Saint population in the sample (39.1% of husbands and 39.3% of wives), dummy variables were created, classifying participants as either LDS or non-LDS. These dummy-coded variables were used in the analysis to control for the large LDS population. This was done because multiple studies have indicated

that those of the LDS faith have better health than the general population (Enstrom, 1989; Enstrom & Breslow, 2008).

### **Analytic Strategy**

Because the attachment behaviors of each spouse is likely to impact the health behaviors of the other spouse, the data analyzed are considered to be non-independent. Consequently, traditional research methods are insufficient for analyzing the interdependent data. The Actor-Partner Interdependence Model (APIM; Kashy & Kenny, 2000), which assumes that there are two levels of data (individual and couple), offers a solution for issues regarding non-independence by providing a means for analyzing dyadic data. The APIM allows for examination of both actor effects (e.g., the effect of the participant's attachment behaviors on his/her own health behaviors) and partner effects (e.g., the effect of the spouse's attachment behaviors on the participant's health behaviors).

Additionally, the outcome of interest (health behaviors) is a categorical variable, which is represented by four groups (high activity/good diet, high activity/poor diet, low activity/good diet, low activity/poor diet). Thus, actor and partner effects will be modeled using multinomial logistic regression (Agresti, 1996). This method will facilitate examining the relationship between attachment behaviors and the probability of being in each outcome group (see Figure 1). In multinomial logistic regression, the probability of being in each category relative to a referent group is estimated (Muthén & Muthén, 1998-2007). The high activity/good diet group will be the referent group, allowing us to identify how attachment behaviors are related to the likelihood of being in each activity/diet group, in comparison to the high activity/good diet group.

## Results

### **RQ1: Are an individual's own low level of attachment behaviors associated with a higher probability of reporting poorer diet and lower levels of physical activity?**

As described in the analytic strategy, a multinomial logistic regression was conducted to analyze the relationship between an individual's own attachment behavior and his or her health practices. For men, this path in the model was not statistically significant. These results suggest that there are no significant actor effects for men's attachment behaviors and their health practices. For women, this path in the model was significant ( $p=.036$ ). Results indicate that for every unit increase in poor attachment behaviors, women are 145% more likely to be in the low activity/poor diet group [ $exp(.897) = 2.45$ ] than in the high activity/good diet group. This finding suggests that the poorer a woman's attachment behaviors are, the more likely she is to have low levels of physical activity and poor dietary habits.

### **RQ2: Are low levels of attachment behaviors of one's partner associated with a higher probability of having poorer diet and lower levels of physical activity?**

For men, this path in the model was not significant, indicating that husbands' attachment behaviors do not have a significant influence on their wives' health practices. Similarly, this path was not significant for women, suggesting that wives' attachment behaviors do not significantly influence their husbands' health practices.

## Discussion

A fundamental purpose of this study was to extend the body of research examining the effects of marital satisfaction on health. The effects that dietary habits and physical activity levels can have on an individual and society at large call attention to the need to further examine the factors that potentially influence individuals' health practices (Bryan et al., 2007; Pate et al.,

1995; Toobert et al., 2003; Vo & Goldstein, 2013). Through analysis of factors influencing health practices, this study aimed to further inform and improve intervention efforts focused on improving one's health. The primary aim of this study was to examine the influence of attachment behaviors on dietary habits and physical activity levels in married couples.

Research questions for this study focused on the relationship between a spouse's attachment behaviors and his/her health practices, as well as the health practices of his/her spouse. Using a systemic perspective, we drew from both attachment (Bowlby, 1969) and social support theories (Cohen & McKay, 1984) as foundations for the concept of attachment behaviors influencing the health practices of self and partner. We also viewed the marriage relationship as particularly influential on one's health practices (Coyne et al., 2001; Gneezy & Shafir, 2009; Keicolt-Glaser & Newton, 2001; King & Reis, 2012; Kulik & Mahler, 2006). However, the extant literature largely focuses on the impact of marital satisfaction or relationship quality, and there is a decided lack of research examining specific relationship factors and health behaviors. Because positive attachment behaviors are related to marital satisfaction, it was hypothesized that attachment behaviors would similarly influence health behaviors (Banse, 2004).

### **Actor Effects for Wives and Husbands**

**Wives.** The first hypothesis, which examined the effects of a spouse's attachment behaviors on his/her own health practices, was partially supported. Of particular interest is the relationship between wives' attachment behaviors and their own health practices. This significant finding suggests that the poorer a wife's attachment behaviors are, the more likely she is to demonstrate poor dietary habits and low levels of physical activity. In fact, for every unit increase in poor attachment behaviors, she is 145% more likely to have poor dietary habits and low levels of physical activity. This finding builds on previous research linking marital

satisfaction to women's health (Gallo et al., 2003; Kiecolt-Glaser et al., 1987; Kiecolt-Glaser & Newton, 2001; King & Reis, 2012) by highlighting that a correlate (i.e. attachment behaviors; Feeney, 2008; Gottman et al., 1998; Sandberg et al., 2012) is similarly predictive of health outcomes.

Although attachment behaviors are correlated with marital satisfaction, they are nonetheless distinct constructs (Sandberg et al., 2012). Our finding that attachment behaviors are predictive of health behaviors for women suggests that how wives engage in the relationship is an important indicator of their functioning. Consequently, if a woman is exhibiting positive attachment behaviors, it may be she feels competent in fulfilling her role as a wife; a factor that has been identified as influencing individual and relational well-being (Patrick, Knee, Canevello, & Lonsbary, 2007). Patrick et al., (2007) also found that relatedness, which is defined as feeling connected to others, was linked to a number of relational factors, including relationship satisfaction. In essence, these findings suggests that if a wife's attachment behaviors allow her to feel competent and connected (Johnson, 2004), she is more likely to be satisfied in her relationship (Patrick et al., 2007; Sandberg, 2012). Given the significant relationship between marital satisfaction and health (Gallo et al., 2003; Gyll et al., 2010; Kiecolt-Glaser et al., 1987; King & Reis, 2012; Sandberg et al., 2013), we would expect that wives would have better health practices if they feel satisfied and securely attached in their marriage. Conversely, if she reports fewer attachment behaviors, she may perceive herself as failing in her role as a wife and thus, be less satisfied with her relationship (Patrick et al., 2007), wherein we would expect poorer health practices. This relationship has been supported in previous findings, linking low levels of marital satisfaction and poor attachment with poor health practices (Gallo et al., 2003; Hernandez-Hons & Woolley, 2012; Kiecolt-Glaser & Newton, 2001; King & Reis, 2012; Orzolek-Kronner, 2002).



**Husbands.** For husbands, there was not a significant relationship between their own attachment behaviors and their health practices, implying that their dietary habits and physical activity levels were not affected by the attachment behaviors they exhibited. Considering that attachment behaviors impact marital satisfaction (Banse, 2004), this finding is consistent with previous research, which suggests that husband's health is less influenced by the quality of the marriage relationship and are more often impacted by marital status. Indeed, previous studies suggest that marital status has a more significant impact on men's health than marital satisfaction or relationship quality (Baumann, Filipiak, Stieber, & Lowel, 1998; Litwak & Messeri, 1989; Umberson, 1992).

Research has also found that women are socialized to be more emotionally intelligent than men and that gender-role socialization encourages the emotional development of women (Miller, Sivermany, & Falk, 1995), suggesting that husbands may be less likely to emotionally monitor the marriage relationship. Thus, because they are not traditionally socialized to focus as much on relationships or emotional connection, perhaps husband's marital satisfaction is less affected by their own attachment behaviors.

This concept is supported by research, which suggests that behaviors that are categorized as "instrumental behaviors" (i.e. taking out the trash, dealing with finances, planning family recreation, and other efforts to care for temporal needs of his wife), are more influential on a husband's report of marital satisfaction than affectional behaviors, which are more characteristic of attachment behaviors (Sandberg et al., 2012; Wills, Weiss, & Patterson, 1974). In fact, when husbands in Will et al.'s study were asked to increase their affectional behaviors, they increased their instrumental behaviors; this suggests that instrumental behaviors are a way for husbands to engage in the marriage relationship and provide pleasure to their wives. Considering this

perspective, it seems that the way in which husbands engage in the relationship also impacts the manner by which they gauge its quality (Wills et al., 1974). Thus, for husbands, measures of instrumental behaviors may be a more accurate way to identify their engagement in and satisfaction with the marriage relationship than attachment behaviors.

If instrumental behaviors are more predictive of marital satisfaction for husbands, they may also be more predictive of husbands' health behaviors than are emotional behaviors characteristic of attachment (i.e. accessibility, responsiveness, and engagement). Consequently, we might expect that husbands' attachment behaviors would not influence their own health practices. Considering the influence of husbands' instrumental behaviors on their marital satisfaction (Wills et al., 1974), and the influence of marital satisfaction on health (Guyll et al., 2010; Kiecolt-Glaser & Newton, 2001; King & Reis, 2012), future research could explore the impact of instrumental behaviors, rather than attachment behaviors, on health outcomes for husbands.

### **Partner Effects for Wives and Husbands**

**Wives.** Findings from the second hypothesis, which examined the relationship between a spouse's attachment behaviors and his/her partner's health practices, were not significant. For wives, this means that their husbands' attachment behaviors did not significantly influence her dietary habits or physical activity levels. This finding is surprising, given that research shows that the behaviors of one's spouse impact the attachment that individual experiences (Banse, 2004; Feeney, 2008; Gottman et al., 1998; Sandberg et al., 2012). In addition, attachment, as well as spousal support, impact health (Hong et al., 2005; Khan et al., 2012; Koball et al., 2012; Kratz et al., 2012; Orzolek-Kronner, 2002; Raque-Bogdan et al., 2011). Research also shows that attachment behaviors impact marital satisfaction (Banse, 2004), and that wives' health is more

impacted by marital satisfaction than are husbands' (Liu, Li, & Feldman, 2013), particularly with regards to health outcomes (Coyne et al., 2001; King & Reis, 2012; Kulik & Mahler, 2006).

Considering the extensive research that shows that women's health is significantly affected by marital satisfaction, we expected to find that husbands' attachment behaviors would significantly impact wives' health practices.

Perhaps part of the reason the relationship between husbands' attachment behaviors and wives' health practices was not significant has to do with the nature of the data used in this study. The attachment behaviors used in analysis were derived from self-report constructs. It is possible that a husband's report of his attachment behaviors is different from his wife's perception of his attachment behaviors. Consequently, it is possible that effects were influenced by a discrepancy between wives' perceptions of their husbands' attachment behaviors and husbands' self-report of their attachment behaviors. For example, if a wife perceives her husband as being more accessible, responsive, and engaged than he perceives himself, a better predictor of her health behaviors would be her perception of his attachment behaviors (rather than his self-report of his attachment behaviors). There is support for this in the literature, which indicates that an ideal perception of one's partner, as opposed to the behaviors the partner is actually exhibiting, is associated with greater marital satisfaction (Murray, Holmes, & Griffin, 1996). Additional research also suggests that wives are more likely to view their husbands as being more securely attached than husbands view themselves (Cobb, Davila, & Bradbury, 2001).

Alternatively, the lack of influence of husbands' attachment behaviors on wives' health practices might also be explained by considering gender-based socialization and role expectations. Research suggests that while emotional development is encouraged in the socialization of women, gender-role socialization restricts a similar type of development in men

(Miller et al., 1995). Thus, to a degree, a wife may be socialized to expect less from her husband emotionally, which may be why his attachment behaviors do not influence her health practices.

**Husbands.** The relationship between husbands' health practices and their wives' attachment behaviors was also nonsignificant. As described previously, research supports this finding by providing evidence that husbands' health may be determined more by marital status than marital satisfaction (Baumann et al., 1998; Litwak & Messeri, 1989; Umberson, 1992). Thus, it is likely that our sample of married men already engaged in more healthy practices than would be expected of a non-marital sample. Future investigations should explicitly examine between-group differences, including the possibility that attachment behaviors may be important for non-married men.

Despite the research that advocates for marital status influencing men's health, this finding is still surprising because numerous studies also show a link between spousal support and health outcomes for men (Hong et al., 2005; Kiecolt-Glaser & Newton, 2001; Khan et al., 2012). One possible explanation for this finding may be in husbands' perception of their relationship. Research suggests that husbands are more likely to have a negative perception of their wives' attachment, meaning they view them as less securely attached than wives view themselves (Cobb et al., 2001). It is possible, then, that wives' attachment behaviors are either minimized or misinterpreted by husbands. Because spouses' perceptions of one another impact their relationship (Gager & Sanchez, 2003), perhaps part of the reason there was not a significant relationship between husbands' health practices and their wives' attachment behaviors is due to husbands' misperceptions of wives' attachment behaviors.

Gender-based socialization and role expectations also offer an explanation for the nonsignificant findings concerning wives' attachment behaviors and husbands' health practices.

Historically, women were assigned the caretaker role in the marriage, whereas men were given the breadwinner role (Widiss, 2012). Perhaps as a result of gender socialization, men are less aware of, and impacted by, the emotional aspect of the marriage relationship than are women (Wills et al., 1974), meaning that wives' attachment behaviors would be less influential on husbands' marital satisfaction, and thus, his health practices (King & Reis, 2012).

The lack of significant findings from this study also suggests that there may be additional factors uniquely influencing husbands' health practices. One study of college-aged individuals, for example, found that perceived pressure from dating partners was a significant influence on men's exercise commitment (Chalk, Miller, Roach, & Schultheis, 2013). Perhaps perceived spousal pressure, rather than attachment behaviors, is more of a motivational factor for husbands to adopt positive health practices.

Additionally, findings from another study suggest that additional factors may be more influential on men's health practices than relationships (Sallis, Hovell, & Hofstetter, 1992). In this study, Sallis et al. (1992) found that while friend and family support were significant factors for women adopting a vigorous exercise routine, men's adoption of vigorous exercise was significantly influenced by self-efficacy, but not by friend and family support. These findings emphasize the need for further research to examine additional factors that may influence husbands' dietary habits and activity levels.

### **Clinical Implications**

For clinicians, the results of this study are informative for treatment planning and therapeutic practice. If a wife reports poor health practices or is experiencing poor physical health, working to improve her attachment behaviors may be a means for helping to improve her health. As she is able to increase her attachment behaviors, and thus, her sense of security in the

relationship (Banse, 2004; Feeney, 2008; Sandberg et al., 2012), she is more likely to adopt beneficial health practices, which in turn, can be a key part of improving her overall health (Penedo & Dahn, 2005). Because these issues are interrelated, therapy that facilitates positive changes in attachment behaviors could play a role in women's medical recovery (Gallo et al., 2003; Kiecolt-Glaser et al., 1987).

Additionally, if wives participating in therapy present with mental health problems, such as depression or anxiety, clinicians may want to include attachment behaviors as part of their assessment and treatment. This consideration is important because attachment behaviors influence wives' health practices, and positive health practices improve mental health (Penedo & Dahn, 2005; Petruzzello, Landers, Hatfield, Kubitz, & Salazar, 1991; Rethorst, Wipfli, & Landers, 2009; Schlicht, 1994). Given these findings, clinicians might focus on helping wives to improve their attachment behaviors to indirectly improve their mental health through positive health practices, and directly improve their mental health through increased marital satisfaction (Banse, 2004; Cano, Chistian-Herman, O'Leary, & Avery-Leaf, 2002; Cano & O'Leary, 2000; Snyder & Whisman, 2004; Whisman, 2001; Whisman & Schonbrun, 2010).

For those who work in the medical field, these findings suggest that there may be an additional, non-medical factor that is influencing female patients' health practices. This study suggests that when a woman is experiencing health problems or reports poor health practices, medical professionals would do well to consider including the marital relationship as part of assessment and treatment (King & Reis, 2012). The inclusion of treatment focused on improving the marriage relationship could be a feasible and necessary means for assisting female clients to improve their health (Burman & Margolin, 1992; Gallo et al., 2003; Kiecolt-Glaser et al., 1987; Sandberg et al., 2013). Indeed, referring female clients for couples therapy may offer an option

for addressing poor dietary practices and low physical activity levels, which could help with a myriad of physical ailments and medical problems.

### **Implications for Future Research and Limitations**

This study is limited by a number of factors. Participants only completed one question for dietary habits and one question for physical activity level, which limits the scope of the reported health practices. Additionally, these two questions include vague terms such as “rarely” and “sometimes,” without giving an example of the frequency (i.e. how many times a week), such terms are meant to assess. We recommend that future research include a more in-depth examination of health practices, such as the inclusion of additional health practices (e.g. sleep habits) or questions that examine dietary habits and physical activity levels more thoroughly (Sallis et al., 1992).

The findings from this paper are also somewhat limited in their generalizability, as participants mainly consisted of young, Caucasian couples. Although we controlled for age and ethnicity in our analysis, in general, the sample was limited in its demographic variability. Consequently, future replications of this study with more diverse samples would be beneficial. Such research would not only help to increase the generalizability of the findings from this study, but researchers could also examine whether unique cultural or ethnic influences between attachment behaviors and health practices exist.

A final limitation results from our inability to control for the presence of medical conditions, which may have a substantial influence on one’s health practices. Researchers may want to replicate the current study, but include covariates of health behaviors, such as specific medical conditions – diabetes, chronic illness, cardiovascular risk (Gallo et al., 2003; Hollis et al., 1986; Khan et al., 2012). Future research could also consider including additional covariates

that are known to influence marital satisfaction and health practices, such as depression or anxiety (Caughlin, Huston, & Houts, 2000; Petruzello et al., 1991; Rethorst et al., 2009; Whisman, 2007). Because research has also found a bidirectional relationship between relationship satisfaction and depression (Cano et al., 2002; Cano & O’Leary, 2000; Snyder & Whisman, 2004; Whisman, 2001; Whisman & Schonbrun, 2010), it seems especially pertinent to include such factors into future analyses. Thus, future research could examine the ways that mental health impacts the relationship between marital satisfaction and mental health.

Longitudinal data would also facilitate the examination of participants’ health practices both prior to and following marriage. This would allow for examination of the role of marital status on health practices, as researchers would be able to assess for changes in health practices prior to and following marriage. Additionally, longitudinal data would allow for the assessment of variation in attachment behaviors and health practices over time, providing researchers the opportunity to analyze the relationship between changes in attachment behaviors and health practices.

Another area of potential research could include a spouse’s perception of his/her partners’ attachment behaviors and its impact on health practices. Perceptions of behaviors that are predictive of relationship satisfaction, or perception of relationship satisfaction may not always align between husbands and wives (Gager & Sanchez, 2003; Wills et al., 1974). Rather than using spouses’ perceptions of themselves to predict health behaviors, research would benefit by examining spouses’ perceptions of one another and the influence of perceived attachment behaviors on health practices (Cobb et al., 2001).

Finally, future research would benefit by examining the directionality of the association between attachment behaviors and health practices. Although we found that attachment



behaviors predicted health practices for women, this study was cross-sectional, limiting our ability to infer that attachment behaviors precede health behaviors. Indeed, perhaps the relationship between health practices and attachment behaviors is bidirectional, where health behaviors are also predictive of attachment behaviors. Considering the growing evidence that health practices are strongly related to mental health, such as anxiety and depression (Petruzzello et al., 1991; Rethorst et al., 2009; Yannakoulia et al., 2008), and that these mental health issues are related to marital satisfaction (Aleem & Danish, 2008; Caughlin et al., 2000; Sandberg et al., 2013; Whisman, 2007), future research might consider examining the influence of health practices on attachment behaviors, as well as including the mediating effects of mental health.

### **Conclusion**

The current study examined the relationship between attachment behaviors and health practices. Findings indicate that for wives, the attachment behaviors they exhibit towards their husbands significantly influence their health practices. The influence of attachment behaviors on health practices is of interest to medical professionals and clinicians, as attachment behaviors could be used to inform treatment of couples with health problems related to poor health practices. These findings suggest that therapy focused on improving wives' attachment behaviors could help her to adopt more beneficial health practices as well. Because there was no significant effect for husbands, further research should be conducted to identify the role of attachment behaviors, as well as potential relationship factors that may predict their health practices.

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**Table 1.** *Demographic characteristics of sample*

Variables	Husbands (n=4,957)		Wives (n=4,957)	
	Mean	SD	Mean	SD
Age	34.73	11.01	32.80	10.73
Length of marriage	4.96	2.52	4.95	2.53
Variables	<i>N</i>	%	<i>N</i>	%
<b>Race</b>				
Asian	114	2.3	139	2.8
African/Black	137	2.8	110	2.2
Caucasian	3,542	71.6	3,532	71.3
Latino	143	2.9	139	2.8
Mixed/Biracial	73	1.5	83	1.7
Native American	33	.7	29	.6
Other	907	18.3	920	18.6
<b>Religion</b>				
Catholic	401	8.1	407	8.2
Jewish	97	2.0	86	1.7
Islamic	22	0.4	20	0.4
Latter-day Saint	1,935	39.1	1,947	39.3
Protestant	891	18.0	907	18.3
None	484	9.8	384	7.8

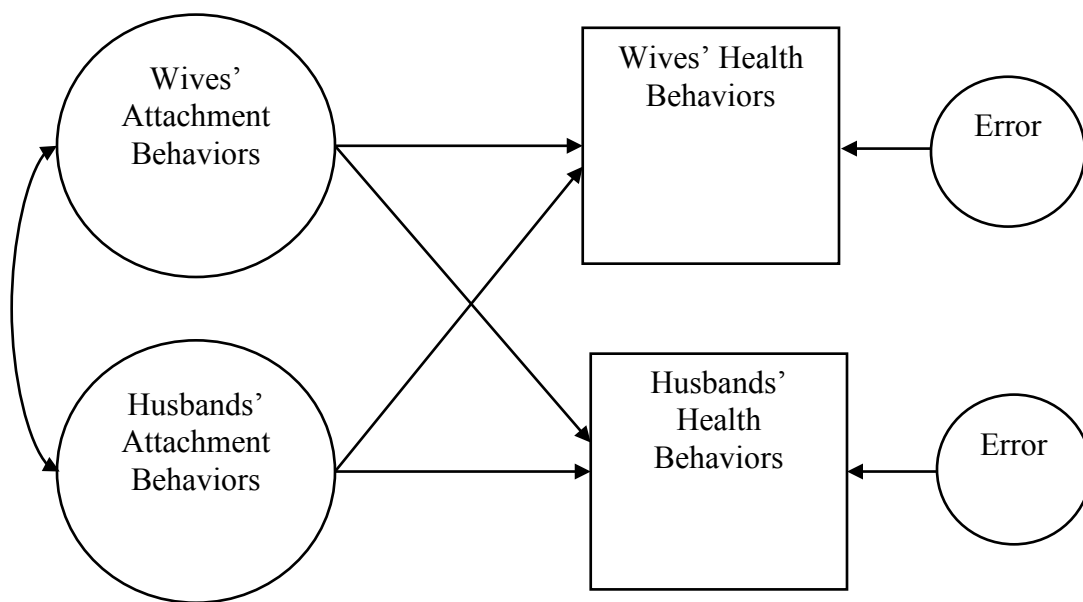
Other	1,116	22.5	1,173	24.1
Education				
High school equivalency or less	320	6.5	254	5.1
Some college	1,635	23.1	1,765	35.7
Associate's degree	407	8.2	582	11.8
Bachelor's degree	1,086	22.0	1,134	22.9
Graduate or professional degree, not completed	401	8.1	424	8.6
Graduate or professional degree, completed	1,096	22.2	791	16.0
Income level				
None to \$20,000	566	11.4	1,206	24.4
\$20,000 - 39,999	441	8.9	386	7.8
\$40,000 – 59,999	315	6.4	250	5.0
\$60,000 – 79,999	245	4.9	148	3.0
\$80,000 – 119,999	321	6.5	157	3.2
\$120,000 – 159,999	143	2.9	58	1.1
\$160,000 – 199,999	159	3.2	57	1.1
\$200,000 and above	108	2.2	34	0.7



**Table 2.** *BARE and health outcome scores*

Variable	Husbands (n=4,957)		Wives (n=4,957)	
	Mean	SD	Mean	SD
Accessibility	1.99	.68	1.75	.67
Responsiveness	1.81	.67	1.64	.63
Engagement	2.11	.90	2.09	.98
Physical Activity	2.56	1.00	2.41	.98
Dietary Habits	2.12	.74	2.27	.715

*Note:* Scores for accessibility, responsiveness, and engagement range from 1 to 5, where a lower score is indicative of better attachment behaviors and a higher score indicates poorer attachment behaviors. Scores for physical activity level and dietary habits each range from 1 to 4, where a higher score suggests better dietary habits or higher levels of physical activity.



**Figure 1.** *Actor Partner Interdependence Model*