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Attachment as a Moderating Factor Between Social Support, Physical Health, and Psychological Symptoms

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Abstract

This study investigated the extent to which perceived social support functioned as a protective factors, and dimensions of insecure attachment (i.e., avoidant and anxious) functioned as risks factors for physical and psychological health. We explored whether insecure attachment was a mechanism that modified the relationship (i.e., protect against or increases risk) between social support and adult health. Participants were 155 non-traditional adult college students from demographically diverse backgrounds. Students were approached in common areas on campus or in classrooms during break and were asked to complete the questionnaire. Bartholomew and Horowitz's Attachment Questionnaire assessed avoidant and anxious attachment dimensions, the Brief Social Support Questionnaire assessed perceived social support, and the Memorial Symptom Assessment Scale measured physical and psychological symptoms. Model results indicated that the anxious dimension of insecure attachment was more directly and positively associated with poorer general physical health and psychological symptoms, whereas greater perceived social support was linked with better reported health. However, an interesting pattern emerged with avoidant attachment through a moderated relationship with social support. The absence of a satisfying supportive network was significantly related to poorer physical and psychological health outcomes for those low in avoidant attachment, but not for those high in avoidant attachment. Results from this work suggest that insecure attachment plays a detrimental role in adult health. Perceived social support does not necessarily function as a blanket protective factor for health, as it seemed to offer less benefit to those high in attachment avoidance.

Keywords

social support, attachment style, physical health, psychological symptoms

The bonds that form between the child and the primary caretaker and the influence those early attachments have on relationships throughout the life span are a focal point of attachment theory. Bowlby (1969) conceptualized attachment as a system of cognition, affect, and behavior utilized by a child to keep the primary caregiver in close proximity. Bowlby (1988) proposed that internal working models of the self and others, built and formed based on experiences during the early years, shape and guide interactions throughout the life span.

This study will explore the important contributions attachment theory can make in better understanding the factors that affect health and wellness. A search of the literature with PsycINFO revealed that although insecure attachment and social support have been examined in relation to specific mental health conditions (i.e., depression, posttraumatic stress disorder [PTSD], substance abuse, etc.), less so have these factors been examined in relation to general psychological wellness in a U.S. sample. In addition, there is a dearth of studies investigating the role of perceived social support and insecure attachment on health in general, and on overall health in particular (i.e., not specific diseases such as cancer, arthritis, chronic pain, etc.). This study also attempts a reorganizing of our understanding of the impact of social support on health, as social dynamics can be guided in part by attachment, and the worldview generated from early attachment experiences may have important theoretical implications for both exacerbating and improving health through the perceived value of social

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support. Hence, a unique contribution of this study will be an exploratory moderated model examining the interaction between both insecure attachment styles and social support on general physical and psychological well-being.

The importance and role of social support in relation to health and well-being have been touted for almost five decades. In a review of the literature, Sobel (1995) discussed the well-established link between social relationships and health. Sobel noted that psychosocial risk factors can increase or exacerbate the risk of disease and that patient care might benefit from greater emphasis on alternate determinants of health (rather than solely disease-specific development and progression), such as personality, socio-economic factors, and social support. The review noted that reduced isolation, support/self-help groups, and general social support reduced or obliterated symptoms or increased resiliency for chronic disease, pain, surgery, or cancer. Indeed, the literature generally concurs that those with low-quality social connections and relationships were at increased risk of earlier mortality and were worse off in terms of physical and psychological health (House, Landis, & Umberson, 1988).

There are several posited mechanisms by which social support may function as a protective factor for physical and mental health. One theory is the stress-buffering model, which suggests that social relationships buffer the effects of stress by increasing coping ability and providing support, assistance, and resources (Cohen, Gottlieb, & Underwood, 2000; Kawachi & Berkman, 2001). Alternately, the "main effect" hypothesis proposes that social support can function as a protective factor irrespective of the presence or level of of stress through channels which provide beneficial physiological mechanisms (i.e., social contact inhibiting the release of stress hormones), social controls, peer pressure that influences more advantageous health behaviors, and the promotion of positive emotional states in the face of adversity (Cohen et al., 2000; House et al., 1988; Kawachi & Berkman, 2001). However, Cohen and colleagues caution that the link between social relationships and health is complex and that many characteristics associated with social relationships and support presumed to be beneficial have not been empirically linked to better health. The authors noted the implementation of support groups has had mixed results on health outcomes for family caregivers and cancer patients and suggested further research be conducted to identify those who might benefit more or less from social support. This heterogeneity in health outcomes may indicate multiple processes by which social support may affect adult health and wellness.

The variability in health outcomes based on social support could be attributable to moderating factors, stemming from the dyadic context of a relationship and the meaning and perceptions attached to social interactions by each individual. A moderator is a variable that influences the direction or strength of an association between two variables, and when an interaction between variables exists, the impact of one variable depends on the level of the other variable (Baron & Kenny, 1986). For example, it was noted that social support received by adult children was paradoxically found to increase depression in the elderly, perhaps as the perception of such support was not entirely positive (i.e., increased feelings of dependence and helplessness; Lee, 1985). Secure attachment in older adults was also found to moderate the relationship between social support and general well-being, such that the more secure the individual's attachment, the greater the positive effect emotional support had on well-being (Merz & Consedine, 2009). We suggest that attachment style (i.e., insecure attachment) is just such a mechanism that might guide perceptions of social support and modify the relationship (i.e., protect against or increases risk) between social support and adult health.

In the absence of sensitive and consistent caregiving, an infant does not demonstrate a lack of attachment to the caregiver, but will instead manifest insecure attachment (i.e., avoidant or anxious; Bowlby, 1988). Adverse physical and mental adult health might be influenced by the development of insecure attachment patterns, which guide internal responses to psychosocial stress and the solicitation and perception of social support. Maunder and Hunter (2001), in a review of the literature, noted that the mother–infant relationship is one that supplies an external physiological regulatory function for the infant and that stress on or loss of this dyadic relationship may result in abnormalities in neurotransmitter and hormonal balances. Specifically, attachment insecurity may guide the ability to elicit social support from the environment influencing the reactivity of the Hippocampus–Pituitary–Adrenal (HPA) axis, cortisol release, and impairment of glucocorticoid receptors critical for the negative feedback loop needed to attain homeostasis after stressful circumstances. The current study adds to this body of empirical work by investigating whether attachment insecurity is related to poorer physical and psychological health outcomes. In addition, one intriguing question might be whether the relationship between social support and health is moderated to some degree by the type of attachment a person has formed.

Social Support and Health

A body of literature has accumulated pointing to social supports protective role in lessening risk for physical illness and positive impact on self-rated health status (Uchino, Cacioppo, & Kiecolt-Glaser, 1996; Van Woerden, Poortinga, Bronstering, Garrib, & Hegazi, 2011). For example, Schöllgen, Huxhold, Schüz, and Tesch-Römer (2011) noted that participant perception of social resources positively affected health, and that higher levels of social support were associated with better reported functional and subjective health. These results seem to hold across the life span, as studies found adolescents who reported low levels of social support also reported poorer health than those reporting higher levels of social support (Geckova, Van Dijk, Stewart,

Groothoff, & Post, 2003), and older adults (60+) who reported insufficient social support reported poorer health than those satisfied with current support levels (White, Philogene, Fine, & Sinha, 2009). Researchers, such as Miyazaki et al. (2003), found that a lack of perceived social support may indeed alter health and wellness on a cellular level. After controlling for age and smoking status, greater reported social support was associated with larger numbers of natural killer cells and a higher natural immunity. Literature reviews have also consistently found a lack of social support to have reliable negative effects on blood pressure regulation, hypertension, cardiovascular functioning, endocrine system functioning, and immune system functioning (Uchino et al., 1996).

Investigations into the potential impact of social support on psychological well-being have also produced a large body of literature. For example, one study found that although physical exercise, relaxation, and social support were all predictive of psychological well-being, social support was the strongest predictor (Hansson, Hilleras, & Forsell, 2005). Other studies utilizing college-aged populations have found students reporting low-quality social support were more likely to be screened positive for probable depression and had a greater probability of reporting anxiety problems (Hefner & Eisenberg, 2009). Paranjape and Kaslow (2010) also found in a study with African Americans that higher levels of social support and spirituality were associated with better mental health.

Attachment Styles and Health

Based on Bowlby's work, Bartholomew and Horowitz (1991) defined adult attachment patterns in relation to positive and negative representations of the self and others, and developed a four-category model of attachment—secure, dismissive, preoccupied, and fearful. Current advances in the field have instead posited measuring attachment in dimensions. Both Brennan, Clark, and Shaver (1998) and Fraley and Waller (1998) described two such dimensions: anxious and avoidant. Individuals scoring high on the anxious dimension are preoccupied with maintaining the affections of others, worry about the partner's availability, and may exhibit clinging behaviors. Those who score low on this dimension are more confident and comfortable with the availability and responsiveness of the partner. Individuals scoring high on the avoidant dimension downplay the importance of attachment needs and maintain emotional distance in relationships. Those low on this dimension are comfortable depending on others and having others depend on them.

In a review of the literature, Repetti, Taylor, and Seeman (2002) discussed the implications on physical and mental health for children reared in risky family environments characterized by family conflict, anger, aggression, neglect, deficient nurturing, and an overall lack of warmth and support. An unsafe family environment was found to create deficits in emotional regulation and social competence, and was associated with health disorders such as cardiovascular disease, hypertension, depression, and anxiety disorders. A risky family environment also created a climate robustly associated with insecure attachment (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998). Given the evidence that attachment styles are important guides in the development of interpersonal relationships and the modulation of stress, questioning attachments role in health outcomes seems warranted.

Attachment styles can have a long-lasting impact on emotional well-being across different developmental phases. In a review of the literature, Chauhan, Awasthi, and Verma (2014) indicated that across the life span, secure attachment was positively associated with relatedness and better psychological and social functioning, whereas insecure attachment was positively related to internalizing, submissiveness, withdrawal, depression, and anxiety. Research has explored the link between attachment and general well-being, finding attachment security related to factors of well-being, such as needs satisfaction, relatedness, and competence (La Guardia, Ryan, Couchman, & Deci, 2000). For example, a study of community-dwelling older adults by Merz and Consedine (2009) found those with greater attachment security had better emotional well-being. Attachment security was also related to a greater positive interpretation of emotional support supplied by close others. Older adults with secure or dismissing attachment styles also reported greater happiness than those with self-reported fearful attachment (Webster, 1997).

More specific to mental health, studies have found those classified with preoccupied or fearful attachment reported more depressed symptoms than those with secure attachment (Carnelley, Pietromonaco, & Jaffe, 1994; Ciechanowski, Walker, Katon, & Russo, 2002; Kidd & Sheffield, 2005; Priel & Shamai, 1995). McWilliams and Bailey (2010) also found the avoidant and anxious attachment dimensions were associated with a greater lifetime prevalence of depression and anxiety disorders. A study by Kafetsios and Sideridis (2006) found greater anxious attachment to be strongly linked with poorer well-being in young adults (anxiety, loneliness, irritability, poor mental health) but still influential for older adults (i.e., anxiety and loneliness). Likewise, avoidant attachment was positively associated with loneliness in younger adults and loneliness and anxiety in older adults. Overall, it seems depression and anxiety are more pervasive among individuals with insecure attachment. Because the studies used different measures of attachment (i.e., three or four prototypes or dimensional measurement), it is difficult to tease out which specific dimension of attachment proffers more risk.

Maunder and Hunter (2001) noted that although recent attention has been given to the relationship between attachment and psychological disorders, investigations into attachment style's impact on physical health and illness have been lacking. When examining self-reported general health,

anxious attachment styles (i.e., preoccupied or fearful) were associated with more reported health symptoms than secure or avoidant attachment (Ciechanowski et al., 2002; Feeney & Ryan, 1994; Kidd & Sheffield, 2005; Wearden, Lamberton, Crook, & Walsh, 2005). In addition, McWilliams and Bailey (2010) investigated specific medical conditions with a large national sample and found both avoidant and anxious attachment dimensions were associated with chronic back and neck pain problems, general chronic pain, frequent or severe headaches, and ulcers. However, anxious attachment alone was associated with cardiovascular disease (e.g., stroke, heart attack, and high blood pressure). Hence, of the studies investigating the link between attachment and physical health, most have implicated the anxious dimension of insecure attachment as a more robust risk factor than the avoidant dimension.

Evidence indicates that the link between insecure attachment and poorer health outcomes may lie in physiological and hormonal reactivity to adverse events in the social environment (Diamond, 2001) and biological mechanism that generate less flexibility and recovery from stressful tasks (Diamond & Hicks, 2005; Gallo & Matthews, 2006). For example, Powers, Pietromonaco, Gunlicks, and Sayer (2006) examined physiological indicators of stress (i.e., salivary cortisol levels) in dating couples in reaction to a conflict task. For women, higher scores on the avoidant dimension were related to greater cortisol reactivity before and during the conflict task. In men, greater scores on the avoidant and anxious dimensions were linked with greater reactivity before the task and slower recovery during and after the task.

Social Support and Attachment

Attachment style may be a potent framework for understanding the relationship between social support and health, as attachment exerts a lifelong influence on relationship formation and general views about the benefits and dangers of interpersonal relationships (Feeney & Noller 1990). The very formation of an attachment style is based in the dyadic relationship between caregiver and infant, and may explain how the desire for and sense of social support originate (Florian, Mikulincer, & Bucholtz, 1995).

Overall, there is convincing evidence that social support and the importance placed on intimate relationships vary as a function of attachment style. Individuals classified with secure attachment have consistently been found to report more perceived support in the social environment and greater satisfaction with levels of support than insecurely attached individuals (Priel & Shamai, 1995). Findings suggest adults with an insecure attachment style are inclined to support ideas and expectations reflecting the risks, costs, and futility of seeking social support (Wallace & Vaux, 1993). Although avoidant participants were more likely to report never having been in love, low intensity feelings of love, or being less likely to seek out social support, anxious–ambivalent individuals scored higher on scales of obsessive preoccupation with love, emotional dependence, a strong desire for commitment, and feeling their social network was untrustworthy (Collins & Feeney, 2004; Feeney & Noller, 1990; Wallace & Vaux, 1993). Anders and Tucker (2000) also found that young adults with anxious and avoidant attachment had smaller social networks and reported being less satisfied with the current social support network than individuals with secure attachment. The mechanism by which insecure attachment is related to poorer social support may be complex and multifaceted. Anders and Tucker found insecure attachment was related to behavioral components, such as deficits in interpersonal communication competence (i.e., trouble with assertiveness, low disclosure, etc.) that mediated the relationship between attachment and poorer support networks.

The desire for social support may increase during times of stress and conflict, and during these emotionally laden times, differences in the solicitation and reliance on social support emerge, guided by attachment styles that shape general views regarding interpersonal relationships. Ognibene and Collins (1998) posited that attachment styles may influence the strategies individuals choose for coping with stressful circumstances. In an assessment of choice of coping styles in reaction to different hypothetical stressors, the authors found that individuals with preoccupied attachment elected to seek both social support and use, escape strategies in response to the stressors, whereas avoidant participants were less likely to seek support and selected distancing coping strategies. Also, numerous studies that have observed couples during a stressful lab task found individuals scoring higher in avoidance tended to use more indirect support-seeking strategies (i.e., complaining, hinting, or sulking), reported more distress, sought less support, shared less anxiety with the partner, and provided less social support for the partner, whereas anxiously attached individuals perceived greater conflict in the relationship and reported more hurt than secure individuals (Campbell, Simpson, Boldry, & Kashy, 2005; Collins & Feeney, 2004, 2000; Simpson, Rholes, & Nelligan, 1992).

Issues with being able to elicit social support or satisfaction with social support seem to occur across many different types of close relationships. For example, anxious–ambivalent individuals were found to report reduced global social support, family support, peer support, and romantic partner support relative to secure individuals (Davis, Morris, & Kraus, 1998; Florian et al., 1995). In addition, Bernardon, Babb, Hakim-Larson, and Gragg (2011) with a sample of university students found that insecurely attached individuals reported greater social, family, and romantic loneliness. Hence, secure attachment and anxious attachments seem characterized by greater support seeking than avoidant attachment, but only secure attachment was characterized by satisfaction with perceived levels of social support.

The present research builds on prior scholarship regarding psychological well-being and physical health in important ways. It is predicted that both of the insecure attachment

dimensions will show a detrimental effect on physical health and psychological symptoms, but the direct effect for anxious attachment is expected to be greater. Although social support is a known protective factor in the etiology of physical and psychological health symptoms, whether the interactive effects of either dimension of insecure attachment modify the relationship between social support and health outcomes will be investigated by this study.

Method

Participants

There were 155 participants (29.2% men and 70.8% women) with a mean age of 23.26 (*SD* = 8.25) years. The sample was African American (29.3%), Caucasian (30.7%), Latino (25.3%), Asian American (4.7%), and Other (10%). The majority of the participants were single (78%) and born in the United States (74.2%). They were predominately upper middle (19.4%), middle (43.2%), or working (25.8%) class.

Procedure

Participants were recruited from a non-traditional college, where students are primarily older, working while obtaining a degree, and commuters. Students were approached in common areas on campus or in classrooms during a break, and asked to complete the questionnaire packet. Participants were not compensated for participation. Standard procedures regarding informed consent, anonymous survey administration, debriefing, and human participant protections were utilized.

Measures

Physical health and psychological symptoms. The study utilized the Memorial Symptom Assessment Scale (MSAS; Portenoy et al., 1994) to assess the frequency (0 = "did not have" to 4 = "almost constantly") and severity (1 = "slight" to 4 = "very severe") caused by 32 symptoms over a 6-month period. The scores on the Frequency and Severity scales for each item were summed and averaged. The overall MSAS score is a summary of each averaged item across all 32 symptoms. The measure can be broken down into Physical (i.e., immune and gastrointestinal problems) and Psychological (i.e., anxiety and depressive) Symptom subscales. Portenoy and colleagues found a Cronbach alpha of .88 for the measure overall. This study found a Cronbach's alpha of .83 for the Psychological Symptoms subscale and .75 for the Physical Symptoms subscale.

Social support. A modified version of the Brief Social Support Questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987) was used to provide an index of perceived social support satisfaction. Each item in the SSQ6 contains two parts: one where the participant names specific people who provide support and a second in which the participant rates his or her satisfaction with the support provided. This study omitted the first section of each question (i.e., naming specific people). For each item, participants rated current levels of support satisfaction (i.e., How satisfied are you that there is someone who accepts you totally, including both your worst and best points?) for each of the six items on a scale of 1 (*very dissatisfied*) to 6 (*very satisfied*). The SSQ6 according to Sarason and colleagues was found to have good test–retest reliability, to have convergent validity with the full SSQ, to be correlated highly with mental health and personality constructs, and to have had high internal reliability with a Cronbach's alpha of .93 for the Satisfaction scale. This study obtained a Cronbach's alpha of .94 for the Modified Satisfaction scale.

Attachment style. Bartholomew and Horowitz's (1991) measure of attachment was used to assess adult attachment styles. The Attachment Questionnaire consists of four statements, each characteristic of one of the four attachment styles (secure, dismissing, preoccupied, and fearful). The participants rated how well each item applied to them on a 7-point Likert-type scale, with a higher score equaling greater agreement. The measure was converted from four prototypes into scales for two dimensions (i.e., anxiety and avoidance). The anxiety dimension was calculated as (preoccupied + fearful) − (secure + dismissive). The avoidant dimension was calculated as (fearful + dismissive) − (secure + preoccupied). The measure has been shown to have good test–retest reliability and convergent validity (Scharfe & Bartholomew, 1994).

Data Analysis

Descriptive statistics and correlational analyses were conducted between all major study variables. The attachment measure was converted from four prototypes into scales for two dimensions (i.e., anxiety and avoidance). Two hierarchal multiple regression equations were calculated with physical symptoms and psychological symptoms as criterion variables. All continuous predictor variables were centered to control for multicollinearity. For each model, Step 1 contained perceived social support, avoidant attachment, and anxious attachment. Step 2 evaluated the potential interactions between social support and each insecure attachment dimension. An additional step explored a three-way interaction between social support and the two insecure attachment styles, but was not significant. Aiken and West (1991) caution against including non-significant higher order interaction terms in a model that are exploratory, and thus, the three-way interaction model is not presented in this article.

Based on the computational tools developed by Dawson (2014), probing of the interaction effect was achieved by conducting a simple slopes analysis and graph for each significant interaction. Graphs were plotted based on techniques

Table 1. Summary of Descriptive Statistics for Major Study Variables.

Variable	*n*	Range	*M* ± *SD*
Social support	154	9-36	31.64 ± 5.61
Anxiety	154	−11-10	−1.36 ± 3.96
Avoidance	154	−9-10	.47 ± 3.80
Physical symptoms	155	0-22	8.02 ± 4.99
Psychological symptoms	154	0-17.50	7.13 ± 3.98

by Dawson in which the simple regression line for the low (−1 *SD*), mean, and high (+1 *SD*) values of the moderator on the dependent variable was plotted against the low (−1 *SD*) and high (+1 *SD*) values of the predictor variable proposed to be moderated.

Results

Descriptive data for all measures were calculated and are presented in Table 1.

Intercorrelations among study variables were conducted (see Table 2). A summary of statistically significant correlations indicates that anxious attachment was positively correlated with physical and psychological symptoms. The anxious and avoidant attachment dimensions were both significantly negatively correlated with perceived social support. Social support was significantly negatively correlated with psychological symptoms. Demographic variables were tested for potentially significant relationships with the dependent variables. No gender differences were found on physical or psychological symptoms. Pearson's correlations did not find age to be significantly associated with physical or psychological symptoms, and a Spearman's correlation did not find socio-economic status associated with the dependent variables. Therefore, these variables were not included in the regression models.

Moderated Regression Analyses for Physical and Psychological Symptoms

The results of the hierarchical multiple regression analyses are presented in Table 3. The regression model for physical symptoms was significant, $F(5, 152) = 4.30$, $p = .001$. In Step 1, anxious attachment, $\beta = .24$, $t(147) = 2.97$, $p = .003$, 95% confidence interval (CI) = [.04, .44], was significant. In Step 2, anxious attachment, $\beta = .23$, $t(147) = 2.85$, $p = .005$, 95% CI = [.02, .44], and the interaction between avoidant attachment and perceived social support were significant, $\beta = .21$, $t(147) = 2.62$, $p = .01$, 95% CI = [.17, .25]. The simple slope effects of social support at conditional values of avoidant attachment were significant at the mean, $t(147) = -2.13$, $p = .04$, and significant at −1 *SD,* $t(147) = -4.44$, $p < .001$. The graph of the interaction between total perceived social support and total avoidant dimension scores (see Figure 1) depicts that at low levels of social support, those lower in attachment avoidance reported more symptoms than those higher in attachment avoidance. However, at high levels of social support, those with low levels of reported avoidant attachment reported fewer physical symptoms. Hence, the detrimental and protective function of perceived social support on health seems most robust for those low in avoidant attachment.

The regression model for psychological symptoms was significant, $F(5, 151) = 6.41$, $p < .001$. In Step 1, perceived social support, $\beta = -.20$, $t(146) = -2.48$, $p = .01$, 95% CI = [−.31, −.08]; avoidant attachment, $\beta = -.18$, $t(146) = -2.30$, $p = .02$, 95% CI = [−.34, −.02]; and anxious attachment, $\beta = .27$, $t(146) = 3.47$, $p = .001$, 95% CI = [.11, .42] were significant predictors. In Step 2, perceived social support, $\beta = -.26$, $t(146) = -3.00$, $p = .003$, 95% CI = [−.40, −.14]; avoidant attachment, $\beta = -.19$, $t(146) = -2.45$, $p = .02$, 95% CI = [−.34, −.03]; anxious attachment, $\beta = .25$, $t(146) = 3.21$, $p = .002$, 95% CI = [.09, .41]; and the interaction between the avoidant attachment dimension scores and social support were significant, $\beta = .17$, $t(146) = 2.10$, $p = .04$, 95% CI = [.14, .19]. The simple slope effects of social support at conditional values of avoidant attachment were significant at the mean, $t(146) = -2.83$, $p = .005$, and −1 *SD,* $t(146) = -4.64$, $p < .001$. The graph of the interaction between total perceived social support and total avoidant attachment scores (see Figure 2) depicts that at low levels of social support, those lower in avoidant attachment reported more symptoms and those with higher avoidant attachment dimension scores reported fewer symptoms. However, at high levels of social support, those with lower levels of avoidant attachment reported fewer symptoms. Again, the protective function of having social support and detrimental aspects of having too little seem most robust for those low in avoidant attachment.

Post Hoc Correlational Analyses

Post hoc analyses were conducted in an attempt to gain a better understanding of the exact nature of the relationship between attachment, social support, and health. The current study used the MSAS to assess physical and psychological symptom reporting. The measure created a composite score based on the frequency and severity of reported symptoms. Correlational analyses were run separately on recalculated Frequency and Severity subscales and can be found in Table 4. A summary of statistically significant correlations indicates that social support was only significantly negatively correlated with the severity of reported physical and psychological symptoms, whereas the anxious attachment dimension was positively correlated with both frequency and severity for all symptom subscales. The avoidant dimension was negatively associated only with the frequency of reported psychological symptoms.

Table 2. Correlations Among Study Variables.

	Physical symptoms	Psychological symptoms	Social support	Anxious attachment	Avoidant attachment
Physical symptoms	—	.68***	−.13	.26***	−.10
Psychological symptoms		—	−.22**	.31***	−.14
Social support			—	−.21**	−.20*
Anxious attachment				—	.004
Avoidant attachment					—

*$p < .05$. **$p \leq .01$. ***$p \leq .001$.

Table 3. Summary of Hierarchical Regression Analyses on Physical and Psychological Symptoms.

		Physical symptoms				Psychological symptoms			
		Step 1		Step 2		Step 1		Step 2	
Variables entered		β	*t* value	β	*t* value	β	*t* value	β	*t* value
Step 1	Social support	−.10	−1.25	−.16†	−1.77	−.20	−2.48**	−.26	−3.00**
	Anxious attachment	.24	2.97**	.23	2.85**	.27	2.70***	.25	3.21**
	Avoidant attachment	−.12	−1.47	−.13	−1.59	−.18	−2.30*	−.19	−2.45*
Step 2	Social × Anxious			−.01	−0.12			.04	0.50
	Social × Avoidant			.21	2.62**			.17	2.10*
Model	*F* value	4.67**		4.30***		8.71***		6.41***	
	R^2	.09		.13		.15		.18	
	Δ*F* value	4.67*		3.52*		8.71***		2.66†	
	ΔR^2	.09		.04		.15		.03	

†$p < .10$. *$p < .05$. **$p \leq .01$. ***$p \leq .001$.

Discussion

Upon examining the correlational relationships and the regression models, those scoring higher on the anxious attachment dimension (i.e., characterized by a negative view of self and apprehension concerning abandonment) evidenced more reported physical and psychological symptoms. Prior research did find that preoccupied and fearful attachment (i.e., both characterized by an anxious component) were linked to greater reported physical illnesses than dismissing (i.e., only an avoidant component) or secure attachment (Kidd & Sheffield, 2005; Wearden et al., 2005). The literature also indicated that insecure attachment was positively related to poorer emotional well-being, such as withdrawal, depression, and anxiety (Chauhan et al., 2014), but the use of different models of attachment (i.e., varied numbers of prototypes and dimension) made teasing out which form of insecure attachment was more directly related to psychological well-being difficult. This study found evidence that the anxious dimension of attachment was linked in general with more reported symptoms on both health scales. In keeping with our hypotheses, the regression models provided evidence that the anxious dimension of insecure attachment was more directly detrimental to general physical and psychological health than the avoidant dimension. Post hoc correlational analyses also did not indicate a differentiation in pattern for frequency and severity of reported symptoms for the anxious attachment dimension, which was positively associated with all Physical and Psychological Symptom subscales. Feeney and Ryan (1994) found that although anxious attachment was related to heightened symptom reporting maintained over time, secure and avoidant attachment were generally unrelated to reports of physical illness. Negative emotionality was both associated with anxious attachment and mediated the relationship between anxious attachment and health. The authors suggested that the increased negative emotion associated with anxious attachment may increase hypervigilance to threat, resulting in increased monitoring and interpretation of somatic sensations as problematic and threatening. Future research might explore the specific affective mechanisms that may moderate the relationship between the anxious dimension of attachment and health.

Based on the pattern of correlational results, the avoidant attachment dimension was not directly associated with reports of physical or psychological symptoms. Interestingly, the avoidant dimension emerged in the regression model for psychological symptoms as a protective factor, as higher scores on the avoidant dimension was linked to fewer reported symptoms. This outcome may be carried by the

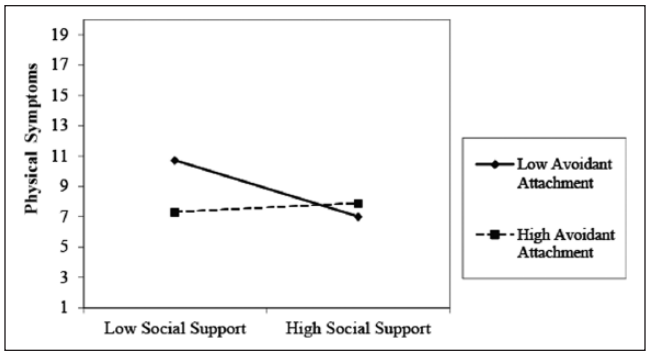

Figure 1. Graphical depiction of the interaction between social support and avoidant attachment on physical symptoms.

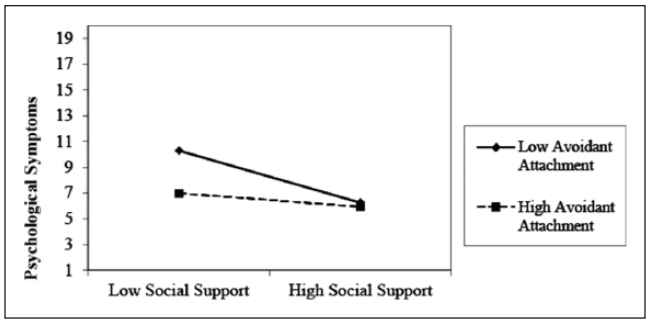

Figure 2. Graphical depiction of the interaction between social support and avoidant attachment on psychological symptoms.

frequency of symptom reporting as the post hoc correlational analysis found that avoidant attachment was significantly negatively correlated only with the frequency of reported psychological symptoms. In a review of the literature, Mikulincer, Shaver, and Pereg (2003) described avoidant attachment as characterized by an avoidance of proximity seeking when under distress and the use of deactivating strategies to regulate emotion and create cognitive, emotional, and physical distance between the individual and others. Perhaps the negative relationship between the avoidant dimension and the reported frequency of psychological symptoms (i.e., consisting of anxiety, worry, and sadness) triggers greater emotional deactivating strategies and lessens the odds of noticing or reporting, as the nature of the psychological symptoms is more closely tied into emotional states than physical symptoms.

Although researchers such as Feeney and Ryan (1994) found secure and avoidant attachment were not related to symptom reporting for physical health, other studies have found a different pattern based on specific medical conditions, with avoidant and anxious attachment associated with different forms of chronic pain and ulcers (McWilliams & Bailey, 2010) and poorer immune system responses (Picardi et al., 2007). One reason for the discrepancy between prior results and the lack of findings in this study linking greater avoidant attachment to poorer physical health might be the type of measurement utilized, which included self-reported subjective assessments of health.

Gouin et al. (2009), in explaining why avoidant attachment (but not anxious attachment) was related to greater Interleukin 6 (IL-6) production (i.e., inflammatory response) during a couple conflict task, noted that the literature points to a more robust relationship between avoidant attachment and physiological stress responses, but that anxious attachment seemed related to subjective distress. Indeed, research has continually found that whereas the anxious dimension of attachment is associated with greater reports of intense anger and uncontrollable rumination, the avoidant dimension is related to emotional suppression and denial of intense emotions (Shaver & Mikulincer, 2007). In short, avoidant individuals seem prone to downplay intense feelings and maintain a sense of self-control over affective experience. The nature of the instrument chosen to measure physical health and wellness in this study (i.e., the MSAS) was based on self-reported symptoms. It is possible that avoidant participants may register less distress than those characterized by the anxious dimension for the same symptoms and so tend to report fewer illnesses. Indeed, individuals with preoccupied attachment (i.e., anxious) have also been found to report more primary health care–related visits than those with other styles of attachment (Ciechanowski et al., 2002), and Feeney and Ryan (1994) discovered that although avoidant attachment was not associated with symptom reporting, it was negatively associated with health-seeking behaviors. Specifically, avoidant individuals reported seeking fewer health care visits than anxious participants. Perhaps avoidant individuals monitor and attend to illness and somatic states less often than anxious individuals and might underreport illness under conditions of self-report. Future research might further explore this provocative finding, by including both physiological and subjective measurements of health, as well as assessment of cognitive style and self-appraisal in relation to attachment style within the same study.

In examining the correlational patterns, perceived social support emerged consistently as having a protective function for both physical and psychological health. This is in keeping with prior research in which a lack of social support was consistently linked with depression, anxiety, and poorer psychological well-being (Hansson et al., 2005; Hefner & Eisenberg, 2009), as well as compromised cardiovascular, endocrine system, and immune system functioning (Uchino et al., 1996). However, in examining both regression models, poorer social support was directly associated only with psychological symptoms. In addition, the post hoc correlational analyses further indicated that perceived social support was not related to the frequency of experiencing symptoms but to the perceived severity of the symptoms. Feldman, Downey, and Schaffer-Neitz (1999) found perceived social support both lessened the distress caused by chronic pain and buffered the effects of negative mood and depression brought

Table 4. Correlations Among Frequency and Severity of Symptoms and Study Variables.

	Frequency of physical symptom	Severity physical symptom	Frequency of psychological symptom	Severity psychological symptom	Social support	Anxious attachment	Avoidant attachment
Frequency of physical symptom	—	.66***	.59***	.38***	−.05	.21**	−.08
Severity physical symptom		—	.56***	.73***	−.17*	.26***	−.10
Frequency of psychological symptom			—	.71***	−.12	29***	−.17*
Severity psychological symptom				—	−.26***	.29***	−.10
Social support					—	−.21**	−.20*
Anxious attachment						—	.004
Avoidant attachment							—

*$p < .05$. **$p \leq .01$. ***$p \leq .001$.

about by chronic pain. The researchers posited that depressed mood and negative emotions heighten self-awareness and that greater attention to the self also carries increased noticing of somatic sensations. Feldman and colleagues found perceived social support diverted attention from pain by supporting coping efforts, discouraging helplessness, lessening extreme worries, and indicating the individual would not be alone in facing their illness. The results of our study also seem to indicate that the protective value of social support lies not in a reduction of noticed symptoms, but in lessening perceptions of symptom severity.

The effects of social support on physical and psychological health were further moderated by avoidant attachment. Those low in avoidant attachment evidenced the expected relationship between social support and health (i.e., fared worse with low levels of social support and inversely better with higher levels). However, those high in attachment avoidance reported fewer physical and psychological symptoms at low levels of social support as compared with those low in attachment avoidance. Two questions arises then as to why avoidant attachment seemed to buffer against illness reporting at low levels of perceived social support and why the health of those high in avoidant attachment seems less affected by low levels of social support.

One reason social support might not be associated with better health for those high on the avoidant dimension might be the protective nature of social support is dependent on the value an individual places on that support. Although those with anxious–ambivalent and avoidant attachment have been found to report reduced social support from family, peers, and romantic partners (Davis et al., 1998), for those characterized by the more avoidant dimension of attachment, the perceived lack of social support may not be viewed as problematic or undesirable. Studies have found those high in attachment avoidance exhibit lower levels of commitment and investment in relationships (Mikulincer, Florian, Cowan, & Cowan, 2002), desire and experience less relationship intimacy (Mikulincer & Erev, 1991), and report less emotional distress at the dissolution of a romantic relationship (Simpson, 1990). Future research might consider measuring the value placed on social support in times of strife, in addition to measuring the quality and content of the social network, as it relates to health outcomes.

An additional explanation for why those high in attachment avoidance may not experience reductions in symptom reporting with higher levels of social support may rest in differential attachment strategies in relation to stress. In a review of the literature, Mikulincer et al. (2003) discussed two secondary attachment strategies utilized under conditions of distress: hyperactivating and deactivating strategies. Deactivating strategies are more characteristic of individuals with avoidant attachment where cognitive, affective, and behavioral strategies are utilized with the express goals of keeping the attachment system deactivated. Hence, although those with avoidant attachment avoid closeness and intimacy, they also orient toward self-reliance and independence, going so far as to suppress painful thought and memories, deny personal imperfections and weakness, and suppress negative emotions when threatened. For example, Mikulincer (1998) found that for avoidant individuals, positive self-views were tied to a self-appraisal validating self-reliance. Hence, it might be that those scoring high on attachment avoidance are also reticent to admit to or report the need for social support and/or physical symptoms indicating illness, as to do so might require a loosening of emotional control or be an admission of weakness.

Limitations

The cross-sectional and self-report nature of this study would limit some of the conclusions that can be drawn from the results. Specifically, the cross-sectional nature of the design allowed us to capture the present nature of the relationship between variables, but does not allow the establishment of causality or sequential development among study variables. Also, the self-report nature of the data, particularly as it relates to the recall and remembrance of illness and symptoms, might underestimate relationships with the health variables, or be prone to distortion (i.e., personality or social factors influencing accurate recall). The limitations of the

present study also suggest areas of inquiry for future research. This study had an ethnically and socio-economically diverse sample, but did not have a large enough sample to compare potential models for different ethnic or economic groups, and it was also skewed heavily toward female participants. The relationship between social support and psychological well-being (i.e., mood and affective disorders) has been found to be more robust in females (Sarason, Levine, Basham, & Sarason, 1983), and so our study might overestimate the strength of the relationships found. Snowden (2001) indicated that, in general, social support and social embeddedness in the community had positive effects on health for both Caucasian and African American participants. However, this relationship was particularly salient for African American men. It is unclear whether social support will operate on health in the same fashion across different ethnic or socio-economic groups.

Also, the measure of social support utilized by this study was modified to measure satisfaction of perceived support, but did not provide a measure of the scope of functional social support networks and did not distinguish between family, peer, and romantic networks. Future research might collect information where participants name specific people who provide support and assess the type of relationship each named support has with the participant. It is possible that the quantity of support or the specific form of support (i.e., friend, family, co-worker) could function differently as a protective factor for health outcomes.

This study measured only perceived social support, which may function differently in relationship to health or attachment dimensions than actual received social support. For example, Collins and Feeney (2004) found that working models of attachment influenced the way in which actual acts of social support were perceived. Participants who scored higher on dimensions of attachment anxiety or avoidance perceived notes from the romantic partner that were low in social support more negatively than those low in attachment avoidance and anxiety, and rated the partner's prior behavior during an interaction as less supportive. Even when romantic partners then sent supportive messages to the participant, those scoring higher on insecure attachment dimensions still rated the partner's support more negatively than those scoring low on insecure dimensions. Hence, perceived social support may function differently in relation to health and attachment style from actual metrics of received support.

One additional limitation of this study is that it was not able to parcel out the potential contributions of preexisting physical illness, psychological disorders, or personality influences on health, or to assess whether any of these factors mediated the relationship between insecure attachment and poorer health. For example, Eggert, Levendosky, and Klump (2007) found that the personality characteristic of neuroticism mediated the relationship between anxious attachment and disordered eating, whereas extroversion partially mediated the relationship between insecure attachment and body dissatisfaction. Roisman et al. (2007) established theoretically meaningful relationships between Big Five personality dimensions and attachment dimension. Anxious attachment was linked with greater neuroticism and less agreeableness, whereas avoidant attachment with less agreeableness, less openness, and less extroversion. The authors noted, however, that attachment styles and personality traits are not redundant constructs, as attachment styles predict interpersonal processes even when personality traits are controlled for, but that attachment theory encompasses aspects of personality development, and so the two constructs would reasonably be expected to have some overlap. Hence, it is possible that the design of this study might overestimate the individual contributions of insecure attachment, without controlling for theoretically relevant personality traits.

Conclusion

This study found social support and insecure attachment were linked to health outcomes. Although anxious attachment evidenced a more direct relationship to poorer health, avoidant attachment did so through a more indirect moderated relationship. Social support was moderated by the avoidant attachment dimension and did not function as a blanket protective factor, providing little benefit to those high on avoidant attachment. The implications of this study warrant questioning whether the protective function of social support is dependent on the extent to which an individual is comforted by the care and concern provided by another, and that attachment style is one key element in understanding disparate influences of social support on health within dyadic interpersonal relationships.

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References

Anders, S. L., & Tucker, J. S. (2000). Adult attachment style, interpersonal communication competence, and social support. *Personal Relationships*, *7*, 379-389.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226-244.

Bernardon, S., Babb, K. A., Hakim-Larson, J., & Gragg, M. (2011). Loneliness, attachment, and the perception and use of social support in university students. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, *43*, 40-51.

Bowlby, J. (1969). *Attachment and loss. Vol. 1. Attachment*. New York, NY: Basic Books.

Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory*. London, England: Routledge.

Brennan, K. A., Clark, C. L., & Shaver, P. (1998). Self-report measures of adult romantic attachment. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York, NY: Guilford Press.

Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005). Perceptions of conflict and support in romantic relationships: The role of attachment anxiety. *Journal of Personality and Social Psychology*, *88*, 510-531.

Carnelley, K. B., Pietromonaco, P. R., & Jaffe, K. (1994). Depression, working models of others, and relationship functioning. *Journal of Personality and Social Psychology*, *66*, 127-140.

Chauhan, R., Awasthi, P., & Verma, S. (2014). Attachment and psychosocial functioning: An overview. *Social Science International*, *30*, 331-344.

Ciechanowski, P. S., Walker, E. A., Katon, W. J., & Russo, J. E. (2002). Attachment theory: A model for health care utilization and somatization. *Psychosomatic Medicine*, *64*, 660-667.

Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relationships and health. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 3-25). Oxford, UK: Oxford University Press.

Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, *78*, 1053-1073.

Collins, N. L., & Feeney, B. C. (2004). Working models of attachment shape perceptions of social support: Evidence from experimental and observational studies. *Journal of Personality and Social Psychology*, *87*, 363-383.

Davis, M. H., Morris, M. M., & Kraus, L. A. (1998). Relationship-specific and global perceptions of social support: Associations with well-being and attachment. *Journal of Personality and Social Psychology*, *74*, 468-481.

Dawson, J. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*, *29*, 1-19.

Diamond, L. M. (2001). Contributions of psychophysiology to research on adult attachment: Review and recommendations. *Personality and Social Psychology Review*, *5*, 276-295.

Diamond, L. M., & Hicks, A. M. (2005). Attachment style, current relationship security, and negative emotions: The mediating role of physiological regulation. *Journal of Social and Personal Relationships*, *22*, 499-518.

Diehl, M., Elnick, A. B., Bourbeau, L. S., & Labouvie-Vief, G. (1998). Adult attachment styles: Their relations to family context and personality. *Journal of Personality and Social Psychology*, *74*, 1656-1669.

Eggert, J., Levendosky, A., & Klump, K. (2007). Relationships among attachment styles, personality characteristics, and disordered eating. *International Journal of Eating Disorders*, *40*, 149-155.

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology*, *58*, 281-291.

Feeney, J. A., & Ryan, S. M. (1994). Attachment style and affect regulation: Relationships with health behavior and family experiences of illness in a student sample. *Health Psychology*, *13*, 334-345.

Feldman, S. I., Downey, G., & Schaffer-Neitz, R. (1999). Pain, negative mood, and perceived support in chronic pain patients: A daily diary study of people with reflex sympathetic dystrophy syndrome. *Journal of Consulting and Clinical Psychology*, *67*, 776-785.

Florian, V., Mikulincer, M., & Bucholtz, I. (1995). Effects of adult attachment style on the perception and search for social support. *Journal of Psychology*, *129*, 665-676.

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77-114). New York, NY: Guilford Press.

Gallo, L. C., & Matthews, K. M. (2006). Attachment style, social interaction, and emotional and ambulatory blood pressure response in adolescents. *Psychosomatic Medicine*, *68*, 253-261.

Geckova, A., Van Dijk, J. P., Stewart, R., Groothoff, J. W., & Post, D. (2003). Influence of social support on health among gender and socio-economic groups of adolescent. *European Journal of Public Health*, *13*, 44-50.

Gouin, J. P., Glaser, R., Loving, T. J., Malarkey, W. B., Stowell, J., Houts, C., & Kiecolt-Glaser, J. K. (2009). Attachment avoidance predicts inflammatory responses to marital conflict. *Brain, Behavior, and Immunity*, *23*, 898-904.

Hansson, A., Hilleras, P., & Forsell, Y. (2005). What kind of self-care strategies do people report using and is there an association with well-being. *Social Indicators Research*, *73*, 133-139.

Hefner, J., & Eisenberg, D. (2009). Social support and health among college students. *American Journal of Orthopsychiatry*, *79*, 491-499.

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*, 540-545.

Kafetsios, K., & Sideridis, G. D. (2006). Attachment, social support and well-being in older adults. *Journal of Health Psychology*, *11*, 863-875.

Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health*, *78*, 458-467.

Kidd, T., & Sheffield, D. (2005). Attachment style and symptom reporting: Examining the mediating effects of anger and social support. *British Journal of Health Psychology*, *10*, 531-541.

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, *79*, 367-384.

Lee, G. R. (1985). Kinship and social support of the elderly: The case of the United States. *Aging & Society*, *5*, 19-38.

Maunder, R. G., & Hunter, J. J. (2001). Attachment and psychosomatic medicine: Developmental contributions to stress and disease. *Psychosomatic Medicine*, *63*, 556-567.

McWilliams, L. A., & Bailey, S. J. (2010). Associations between adult attachment ratings and health conditions: Evidence from the National Comorbidity Survey Replication. *Health Psychology*, *29*, 446-453.

Merz, E. M., & Consedine, N. S. (2009). The association of family support and well-being in later life depends on attachment style. *Attachment & Human Development*, *11*, 203-221.

Mikulincer, M. (1998). Adult attachment style and affect regulation: Strategic variations in self-appraisals. *Journal of Personality and Social Psychology*, *75*, 420-435.

Mikulincer, M., & Erev, I. (1991). Attachment style and the structure of romantic love. *British Journal of Social Psychology*, *30*, 273-291.

Mikulincer, M., Florian, V., Cowan, P. A., & Cowan, C. P. (2002). Attachment security in couple relationships: A systemic model and its implications for family dynamics. *Family Process*, *41*, 405-434.

Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, *27*, 77-102.

Miyazaki, T., Ishikawa, T., Iimori, H., Miki, A., Wenner, M., Fukunishi, I., & Kawamura, N. (2003). Relationship between perceived social support and immune function. *Stress & Health*, *19*, 3-7.

Ognibene, T. C., & Collins, N. L. (1998). Adult attachment styles, perceived social support and coping strategies. *Journal of Social and Personal Relationships*, *15*, 323-345.

Paranjape, A., & Kaslow, N. (2010). Family violence exposure and health outcomes among older African American women: Do spirituality and social support play protective roles? *Journal of Women's Health*, *19*, 1899-1904.

Picardi, A., Battisti, F., Tarsitani, L., Baldassari, M., Copertaro, A., Mocchegiani, E., & Biondi, M. (2007). Attachment security and immunity in healthy women. *Psychosomatic Medicine*, *69*, 40-46.

Portenoy, R. K., Thaler, H. T., Kornblith, A. B., Lepore, J. M., Friedlander-Klar, H., Kiyasu, E., . . . Norton, L. (1994). The Memorial Symptom Assessment Scale: An instrument for the evaluation of symptom prevalence, characteristics and distress. *European Journal of Cancer*, *30A*, 1326-1336.

Powers, S., Pietromonaco, P. R., Gunlicks, M., & Sayer, A. (2006). Dating couples' attachment styles and patterns of cortisol reactivity and recovery in response to a relationship conflict. *Journal of Personality and Social Psychology*, *90*, 613-628.

Priel, B., & Shamai, D. (1995). Attachment style and perceived social support: Effects on affect regulation. *Personality and Individual Differences*, *19*, 235-241.

Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, *128*, 330-366.

Roisman, G. I., Holland, A., Fortuna, K., Fraley, R. C., Clausell, E., & Clarke, A. (2007). The Adult Attachment Interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology*, *92*, 678-697.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, *44*, 127-139.

Sarason, I. G., Sarason, B. R., Shearin, E. H., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, *4*, 497-510.

Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships*, *1*, 23-43.

Schöllgen, I., Huxhold, O., Schüz, B., & Tesch-Römer, C. (2011). Resources for health: Differential effects of optimistic self-beliefs and social support according to socioeconomic status. *Health Psychology*, *30*, 326-335.

Shaver, P. R., & Mikulincer, M. (2007). Boosting attachment security to promote mental health, prosocial values, and inter-group tolerance. *Psychological Inquiry*, *18*, 139-156.

Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology*, *59*, 971-980.

Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support-seeking and support-giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology*, *62*, 434-446.

Snowden, L. R. (2001). Social embeddedness and psychological well-being among African Americans and Whites. *American Journal of Community Psychology*, *29*, 519-536.

Sobel, D. S. (1995). Rethinking medicine: Improving health outcomes with cost-effective psychosocial interventions. *Psychosomatic Medicine*, *57*, 234-244.

Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*, *119*, 488-531.

Van Woerden, H. C., Poortinga, W., Bronstering, K., Garrib, A., & Hegazi, A. (2011). The relationship of different sources of social support and civic participation with self-rated health. *Journal of Public Mental Health*, *10*, 126-139.

Wallace, J. L., & Vaux, A. (1993). Social support network orientation: The role of adult attachment style. *Journal of Social & Clinical Psychology*, *12*, 354-365.

Wearden, A., Lamberton, N., Crook, N., & Walsh, V. (2005). Adult attachment, alexthymia, and symptom reporting: An extension to the four category model of attachment. *Journal of Psychosomatic Research*, *58*, 279-288.

Webster, J. D. (1997). Attachment style and well-being in elderly adults: A preliminary investigation. *Canadian Journal on Aging*, *16*, 101-111.

White, A. M., Philogene, G. S., Fine, L., & Sinha, S. (2009). Social support and self-reported health status of older adults in the United States. *American Journal of Public Health*, *99*, 1872-1878.

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