Chapter

COMMUNICATION, RELATIONSHIP SATISFACTION, ATTACHMENT AND PHYSICAL/PSYCHOLOGICAL SYMPTOMS: THE MEDIATING ROLE OF LONELINESS

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ABSTRACT

Background: Loneliness in close relationships impacts the well-being of partners. The present chapter presents data on loneliness in romantic relationships among emerging adults. Conceptualizations of loneliness are outlined followed by the relationships among loneliness, attachment, relationship satisfaction and communication between partners. As few studies have examined how these concepts are related and, to date, no research has studied how loneliness mediated between relationship variables and physical and psychological symptoms, in young adults, involved in romantic relationships, a study focused on those relationships is also presented and its implications for practice, discussed.

Methods: 210 college undergraduate students involved in a romantic relationship participated in the study. Students were participating in a program to promote couple relationship education. Data was collected before starting a program (T1) and 7 weeks after it began (T2). Instruments used were: Short-form UCLA Loneliness scale (ULS-8), (Hays & DiMatteo, 1987); Relationship Satisfaction Scale (Funk & Rogge, 2007); Experiences in Close Relationship Scale (ECR)-short form (Wei, Russell, Mallinckrodt, & Vogel, 2007), Communication Patterns Questionnaire (Christensen, 1988), Rotterdam Symptom Checklist (De Haes, et al., 2012).

Results: There were significant differences on communication ($p \leq .001$) and anxiety attachment ($p=.008$) between T2 and T1. Considering the predictor variables at T1,

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loneliness mediated the relationships between avoidance attachment and physical (mediating effect = .043) and psychological symptoms (mediator effect = .061) and the relationship between anxiety attachment and physical (mediator effect = .109) and psychological symptoms (mediator effect=.153). Considering the predictor variables at T2, loneliness mediated the relationship between relationship satisfaction and physical (mediating effect = -. 051) and psychological symptoms (mediator effect = -. 072) and the relationship between anxiety attachment and physical (mediator effect = .105) and psychological symptoms (mediator effect=.147).

Conclusion: The results highlight the importance of loneliness for physical and psychological symptoms emphasizing the important role of attachment, in intervention programs.

Keywords: Loneliness, Communication, Satisfaction, Attachment, Physical and Psychological Symptoms

INTRODUCTION

In Western cultures romantic relationships are viewed as an antidote to loneliness (Seepersad, Choi, & Shin, 2010). According to general belief, loneliness is inevitable in the absence of intimate, warm and attached relationships. However, loneliness seems to be a multidimensional and multifaceted experience shared by all people (Rokach & Brock, 1997). Although loneliness is painful, experiencing loneliness in a romantic relationship may be particularly distressing. Partners' feelings of loneliness in close relationships and their effect on the well-being of partners has received attention in the literature (e.g. Pinquart, 2003; Weiss, 1982).

The present chapter investigates loneliness in romantic relationships. Definitions and conceptualizations of loneliness will be addressed followed by the relationships among loneliness, attachment, relationship satisfaction and communication between partners. However, few studies have examined how these concepts are related and, to date, no research has examined how loneliness may mediate relationships between these constructs in emerging adult romantic relationships.

Conceptualizations and definitions of Loneliness

Perlman and Peplau (1981, p.31) defined loneliness as "the unpleasant experience that occurs when a person's network of social relations is deficient in some important way, either quantitatively or qualitatively". Other authors define loneliness in terms of "situations in which the number of existing relationships is smaller than is considered desirable or admissible, as well as situations where the intimacy one wishes for has not been realized" (de Jong Gierveld, 1987, p.120). These definitions emphasized loneliness as a multidimensional experience.

Loneliness includes one dimension that involves feelings related to the absence of intimate attachment, feelings of abandonment and emptiness. Another dimension involves how individuals perceive loneliness: if it is stable, changeable or treatable. The third dimension includes feelings such as shame, guilt, and sorrow (de Jong Gierveld, 1989). However, most researchers agree that loneliness is the result of deficiencies in social relationships, that

loneliness is a subjective phenomenon and a distressing and unpleasant experience (Peplau & Perlman & 1982).

Theorists differ in the way they have defined the nature of the social deficiency. Some theorists stress the *need for intimacy* as central to loneliness. Loneliness exists when social needs are not fulfilled (e.g. Weiss, 1973). This perspective has relied heavily on attachment theory which assumes that impaired childhood relationships affect later loneliness (Perlman & Peplau, 1981). Other theorists adopt the c*ognitive discrepancy approach*. Peplau and Perlman (1979, 1982; Perlman and Peplau, 1998) suggested that loneliness is not the result of objective lack of social contact. Rather, loneliness is viewed as the discrepancy between perceived interaction need and the amount available. As such, loneliness occurs when there is an imbalance between needed or desired and actual social relationships.

Loneliness is also conceptualized differently from solitude, social isolation or being alone. Although loneliness is a subjective experience, aloneness or solitude are objective social situations (de Jong Gierveld & Havens, 2004). Aloneness is a communicative separation from others (Larson, 1990), that is, the person has no one to communicate with even on the phone or by computer. Whereas loneliness is described as a negative state of yearning an intimate relationship, aloneness, on the other hand, has been found to be a positive experience and viewed as healthy and necessary (Buchholz & Catton,1999). Solitude or being alone is a voluntary and desirable experience because of its positive benefits (Galanaki, 2005) that provide personal growth, creativity, thinking, and self-renewal (Buchholz & Catton, 1999; Buchholz & Tomasi, 1994; Larson, 1990).

Research has examined predictors and consequences of loneliness (e.g. Segrin, Nevarez, Arroyo, & Harwood, 2012). According to the discrepancy model, possible antecedents of loneliness have been identified (Perlman & Peplau, 1981). Attachment is an important antecedent of loneliness representing the need for intimacy. Loneliness is also influenced by the number of people in the social network, but satisfaction with the relationships is more influential (Asher & Paquette, 2003).

Adult Romantic Attachment and Loneliness

Bowlby (1973) claimed that early emotional bonds between infants and caregivers help to develop internal working models of relationships based on the availability and dependability of caregivers. These working models influence adult romantic relationships (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Hazan and Shaver (1987) first assessed adult attachment styles that are analogous to infant attachment and identified secure, anxious-resistant and avoidant categories. According to the authors, secure individuals have a positive model of self and others. Anxious-ambivalent individuals view themselves as unworthy to be loved and have no trust that attachment figures will be available and responsive to their needs. Avoidant people distance themselves from attachment figures and believe that they must trust themselves in relationships and not others. Although there are different conceptualizations and measurements of attachment style (for review see, Shaver and Mikulincer, 2002), an increasing agreement exists that attachment style has two primary dimensions. Whereas Bartholomew and Horowitz (1991) described these two dimensions as a *model of self* and a *model for others*, Brennan, Clark, and Shaver (1998) focused on *attachment related anxiety* and *attachment avoidance.* The first dimension (self/anxiety) involves the individual's fear of being rejected

and abandoned. The second dimension (other/avoidance) shows the extent of an individual's feelings of closeness and intimacy towards the partner. Anxious people desire closeness and relationships and cling to their partner because of the fear of abandonment. Avoidant individuals are uncomfortable with closeness and choose self-reliance and emotional distance. Secure attachments are low in anxiety and avoidance dimensions while insecure attachments are high in levels of anxiety, avoidance or both (Kane et al., 2007).

In the early 1980s, some researchers began to use attachment theory in order to understand the features of, and reasons for, loneliness. Scholars suggested that attachment styles formed during childhood had an impact on adult loneliness (DiTomasso, Brennen-McNulty, Ross, Burgess, 2003; Weiss, 1973). Weiss (1973) used attachment theory to make a clear link between loneliness and romantic relationships and represents the *need for intimacy* perspective on loneliness (Perlman & Peplau, 1981). He asserted that loneliness is a separation distress and a deficiency in the level of close relationships with significant others. Weiss separated loneliness into two parts: social loneliness and emotional loneliness. Social loneliness refers to the lack of social integration and emotional loneliness is experienced when the romantic attachment figure is absent. Social loneliness arises in the absence of broader social networks, including friends and colleagues. Social networks cannot fill the gap of emotional loneliness, but a new intimate partner may do so. Therefore, attachment is a form of emotional closeness that elicits feelings of security (Weiss, 1973). Studies revealed that secure and insecure attachment styles affect loneliness (e.g., DiTommaso et al., 2003; Pereira, Taysi, Orcan, & Fincham, 2013; Bernardon, Babb, Hakim-Larson, & Gragg, 2011; Wei, Russell, & Zakalik, 2005). Secure attachment is related to low levels of loneliness and insecure attachment with high levels of loneliness. Therefore, avoidant individuals are more self-sufficient psychologically and emotionally and minimize the importance of close relationships feeling loneliness as a result of a deficit in closeness. Those with an anxious attachment style fear being rejected and abandoned and want others to stay with them and available all the time. As a result, negative evaluation of others leads anxious people to feel lonely. Attachment has been found to be a significant predictor of loneliness (DiTommaso et al., 2003; Pereira, et al., 2013). The insecure partner may experience loneliness as a result of their unfulfilled attachment needs.

The present study hypothesized that people with secure and insecure attachment styles would report different levels of loneliness. Specifically, anxious attachment would be associated with higher levels of loneliness than avoidant attachment. Consequently, insecure attachment styles may foster increased loneliness in partners and, as a result, individuals may become prone to physical and psychological symptoms.

Communication Patterns and Loneliness

Loneliness is related to feelings of perceived deficits in communication with the partner and communication problems contribute to the evolution and stability of loneliness (Zakahi & Duran, 1985). Although empirical research has paid considerable attention to the association between loneliness and communication in a family environment, not much is known about this relationship, in dating couples. Family is an important environment that may lead to loneliness and family members' loneliness depends highly on communication patterns and conflict (e.g. Burke, Woszidlo & Segrin, 2012; Segrin et al., 2012). Different patterns of communication have been described as crucial such as mutual constructive, demand-withdraw and mutual

avoidance-withholding (e.g. Christensen & Shenk, 1991; Christensen & Sullaway, 1984; Noller & White, 1990).

The most dysfunctional communication pattern is the demand-withdraw communication pattern. In this communication pattern, described first by Sullaway and Christensen (1983), one partner demands and the other partner showing defensiveness, withdraws from conflict situations, disengages emotionally and changes the subject.

Unhappy couples showed less functional communication, and more demand-withdrawal communication. Mutual avoidance-withholding is seen when both partners avoid discussing and resolving the conflict. Mutual avoidance-withholding and demand-withdraw communication are inadequate responses to conflict and are related to relationship distress (Noller & Feeney, 1998).

Relationship Satisfaction and Loneliness

According to the *cognitive approach,* loneliness stems from dissatisfaction experienced in social relationships. Thus, loneliness is affected not only by the absence of intimate relationships but also by the quality of relationships (Peplau &Perlman, 1982). That is, loneliness occurs because of the discrepancy between desired and actual satisfaction with significant others. Dissatisfaction with the relationship is evaluated as a precipitating event that activates loneliness. Therefore, being in an intimate relationship may not necessarily protect against loneliness. Having difficulties in forming and maintaining satisfying relationships with others is associated with feelings of loneliness (Baumeister & Leary, 1995).

Loneliness is a stressful socio-emotional experience, and, as noted, low relationship satisfaction may contribute to it (Segrin, Powell, Givertz, & Brackin, 2003). Relationship satisfaction reflects the positive versus negative affect experienced in a relationship and is influenced by the extent to which a partner fulfills the individual's most important needs (Rusbult, Martz, & Agnew, 1998). Loneliness and relationship satisfaction are negatively related (Yum, 2003). Lonely persons evaluate their friends more negatively (Wittenberg & Reis, 1986) and as less reliable (Rotenberg, 1994). Ultimately, loneliness is not an outcome because of the deficits in personal relationships, but results from feelings of dissatisfaction with current relationships (de Jong Gierveld, Broese van Groenou, Hoogendoorn, & Smit, 2009). Among dating partners, loneliness may result from dissatisfaction with the romantic relationship. Several studies show a negative correlation between loneliness and the quality of romantic relationships (Dykstra & Fokkema, 2007; Flora & Segrin, 2000; Segrin et al., 2003).

Loneliness and Physical and Psychological Symptoms

Loneliness has been related to physical symptoms such as elevated systolic blood pressure (Hawkley, Masi, Berry, & Cacioppo, 2006; Hawkley, Bernston, Burleson, & Cacioppo, 2003), increased vascular resistance, (Cacioppo, et al., al., 2002a; Hawkley, Berntson, Burleson, & Cacioppo, 2003; Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Heikkinen & Kauppinen, 2004), number of risk factors for cardiovascular disease (Caspi, Harrington, Moffitt, Milne, & Poulton, 2006), increased adrenocortical activity (Adam, Hawkley, Kudielka, & Cacioppo, 2006), altered immunity (Pressman et al., 2005; Cole et al., 2007); Hawkley & Cacioppo, 2003; Pressman et al., 2005), and these effects may carry over, in the long term in

chronic illnesses. Although these influences may not be so evident in young dating couples, a relationship between loneliness and physical health has been reported (Hawkley et al. 2006).

Loneliness has also been associated with psychological symptoms particularly depression, (Cacioppo, et al., 2006b; Cacioppo, Hawkley, & Thisted, 2010, Heikkinen & Kauppinen, 2004; Wei, Russell, & Zakalik, 2005), sadness, anxiety, low self-esteem (Cacioppo, et al., 2006a) and impaired sleep (Cacioppo, et al., 2002b) alcohol abuse, child abuse, sleep problems, personality disorders.

Loneliness not only increases depressive symptoms but also increases perceived stress, fear of negative evaluation, anger, and diminishes optimism and self-esteem (Cacioppo et al,. 2006a). Loneliness is generally reported more among adolescents and young children, contrary to the myth that it occurs more in the elderly (Mushtaq, Shoib, Shah, & Mushtag, 2014).

The aim of the present study was to examine the extent to which loneliness might account for the relationship between communication and physical/psychological symptoms; between attachment styles and physical/psychological symptoms and between relationship satisfaction and physical/psychological symptoms. That is, loneliness would function as a mediating variable.

It was hypothesized that insecure attachment in romantic relationship, poor communication and less relationship satisfaction at T1 and T2, would lead to loneliness that would result in subsequent physical and psychological symptoms.

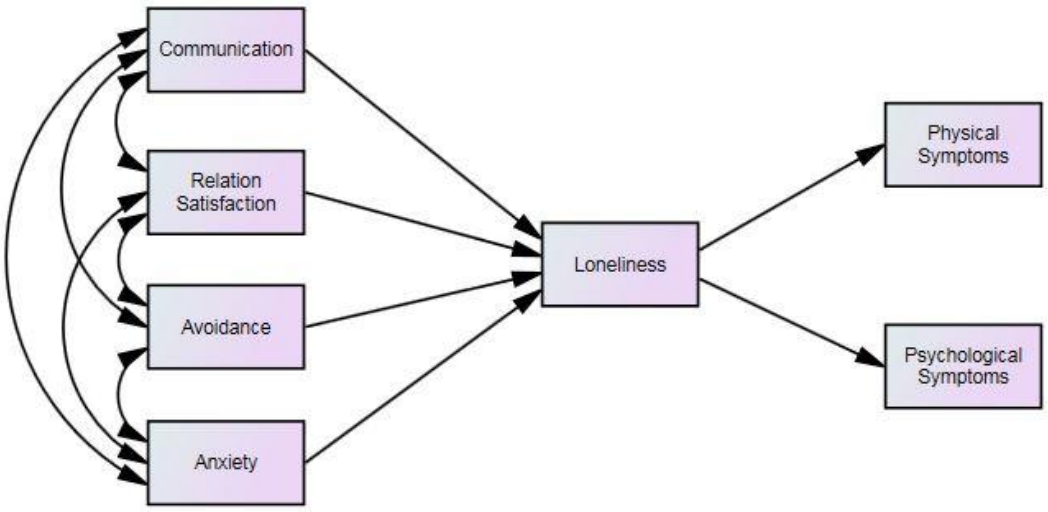


Figure 1. Hypothesized model

METHODS

Participants and Procedure

Students in an introductory course on family development at a large university in the Southeastern United States participated in the study. Participation in the study was one of multiple options for students to obtain extra course credit. Students took the section of the

course in relationship education that gives considerable attention to family background influences, relationship expectations and the influence of sex role socializations on romantic relationships, communication skills and ways to manage conflict. The program is based on two themes: "sliding versus deciding" focused on making explicit decisions about the progression of a relationship and safety, both physical and emotional, as well as commitment safety (Fincham, Stanley & Rhoades, 2011).

The study was approved by the Institutional Review Board and included only students (n = 345) who were in a romantic relationship. The average age of participants was 19.46 (SD= 1.92) and 25% were males. After providing informed consent, participants completed a set of instruments. Students were assessed at T1, before starting the program and at T2, seven weeks later, after receiving an intervention to promote couple relationship education (Fincham, Stanley & Rhoades, 2011).

INSTRUMENTS

Short-form UCLA Loneliness scale (ULS-8)

Loneliness was measured by the Short-Form Measure of Loneliness (Hays & DiMatteo, 1987).

The scale has 8 items to assess loneliness ("I lack companionship", "There is no one I can turn to", "I am an outgoing person", "I feel left out", "I feel isolation from others", "I can find companionship when I want it", "I am unhappy being so withdrawn", "People are around me but not with me"), in a 4-point Likert scale with values ranging from ''never" to ''always". High scores indicate more feelings of loneliness. Cronbach's alpha was .84, in this sample.

The Communication Patterns Questionnaire (CPQ) (Christensen, 1987)

The Communication Patterns Questionnaire assesses the demand and withdrawal communication pattern in relationships.

Noller and White (1990) described four factors: Negativity or Coercion (blame, threat, physical and verbal aggression), Mutuality (discussion, negotiation, and understanding), Post-Conflict Distress (guilt, hurt, and withdrawal), and Destructive Process (demand-withdraw, criticize-defend, pressure-resist patterns).

The CPQ consists 29 items, but in the present study only six items, three from Coercion factor and three from Destructive Process will be used. Partners responded to items using a nine-point Likert scale such as *"Man calls woman names, swears at her, or attacks her character"* from Coercion factor and such as *"Man nags or demands while woman withdraws, becomes silent, or refuses to discuss the matter further*" from Destructive factor.

The two factors were summed to yield a total communication score. Higher scores indicate a negative communication pattern between partners. The CPQ has a high internal consistency ranged from .86 for Coercion to .79 for Destructive Process. In the present study Cronbach's alpha was .67 and .68, respectively.

Relationship Satisfaction Scale

The relationship satisfaction scale is a 4-item measure that assesses satisfaction in a relationship (Funk & Rogge, 2007). Scale items are: "How rewarding is your relationship with your partner?", "How well does your partner meet your needs?", "To what extent has your relationship met your original expectations?" and "To what extent has your relationship met your original expectations?"

Items are rated using a Likert-type format from 0 (*not at all)* to 5 (*completely).* High scores indicate more relationship satisfaction. In the current sample, Cronbach alpha was .93.

Rotterdam Symptom Checklist

This checklist assesses psychological symptoms (15 items) and physical symptoms (14 items) (De Haes, et al., 1996). Psychological morbidity items include depressed mood, despairing about the future, worrying, and anxiety. Examples of physical symptoms include fatigue, tiredness, headaches, dizziness, difficulty sleeping. Higher scores indicate higher psychological or physical morbidity respectively.

In this sample, the subscales of psychological and physical morbidity booth yielded a Cronbach alpha of .86.

The Experiences in Close Relationship Scale (ECR)-Short Form

To measure attachment styles, the Experiences in Close Relationships—Short form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007) was used. The ECR-S contains 12 items divided into two subscales.

The attachment anxiety subscale (6 items) measures fear of abandonment or rejection from others (e.g., my desire to be very close sometimes scares people away) and the avoidant attachment subscale (6 items) assesses fear of intimacy, discomfort with closeness and self-reliance (e.g. "My desire to be very close sometimes scares people away.") High scores in each subscale indicate more anxious or avoidant attachment style, respectively. In the present study, coefficient alpha was .88, for the anxiety attachment style, and .91 for the avoidance attachment style.

Data Analysis

Paired t tests were used to assess differences on psychological variables between the two assessments. The square Mahalanobis distance and the verification of normality of the variables through the asymmetry coefficients and kurtosis univariate and multivariate were used, allowing the elimination of the cases that generated the violation of assumptions. Data were analyzed using IBM SPSS Statistics 22 and IBM SPSS Amos 22.

In the final sample, no variable showed values of asymmetry and kurtosis indicators of violation of the normal distribution, there were no Mahalanobis distance indicators of the existence of outliers and also there were no strong correlations between the exogenous variables, indicators of multicollinearity. For the refinement of the final model, the modification

indices and the quality of the model fit was assessed with the indices X^2 / df, CFI, GFI, RMSEA and P [RMSEA≤0,05]. Mediator effects indicated in the results section are standardized values. In the first model, all independent variables were assessed at T1 and the mediator and outcome varibles at T2. In the second model, all variables were assessed at T2.

RESULTS

Differences between T1 and T2 on Psychological Variables

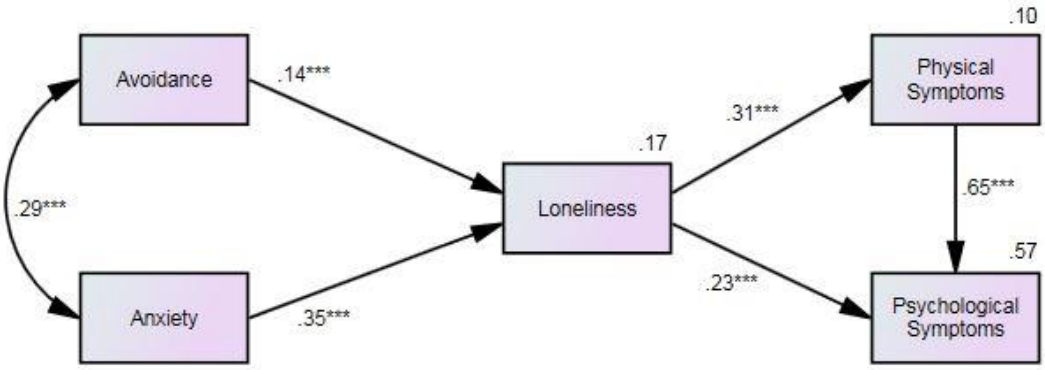
The results show significant differences on communication (p≤ .001) and anxiety attachment (p=.008); anxiety attachment at T2 decreased and communication got better (a high score indicates negative communication). No other significant differences were found (Table 1).

Table 1. Variables at T2-T1 – Descriptive Statistics & Paired t tests

Variables	Mean	Std. Deviation	T	P
Communication	-1.90	.94	-29.43	<.001
Relation Satisfaction	-.15	2.55	-.87	.388
Avoidance	.41	4.70	1.25	.213
Anxiety	-1.06	5.73	-2.69	.008
Loneliness	-.19	3.31	-.81	.418

Loneliness as a Mediator between Attachment (T1) and Physical and Psychological Symptoms (T2)

The multivariate linear regression final model showed a good fit: X^2 / df = 2.357; CFI = .979; GFI = .982; RMSEA = 0.081; P [RMSEA≤0.05] = 0.181 (Figure 2; Table 2). Considering the predictor variables at T1, loneliness was a mediator in the relationship between avoidance and physical symptoms (mediating effect = .043) and psychological symptoms (mediator effect = .061) and in the relationship between anxiety attachment and physical symptoms (mediator effect = .109) and psychological symptoms (mediator effect=.153). A total of 17% of the variance in loneliness was explained by anxiety and avoidant attachment, whereas loneliness explained 10% of physical symptoms and the later 57% of psychological symptoms.



* < .05, ** < .01, *** < .001

Figure 2. Final model- Independent variables at T1, Mediator and Dependent Variables at T2.Correlations and Standardized coefficients are shown.

Table 2. Moment T1 – Fit indices

Fit indices	Initial model	Final model
X^2 / df	16.012	2.357
CFI	.588	.979
GFI	.867	.982
RMSEA	.268	.081
P (RMSEA<,05)	.000	.181

Loneliness as a Mediator between Relationship Satisfaction/ Avoidance Attachment and Physical and Psychological Symptoms, at T2

The multivariate linear regression final model showed a good overall fit to the data: X^2 / df = 2.006; CFI = .984; GFI = .985; RMSEA = 0.069; P [RMSEA≤0.05] = 0.261 (Figure 3; Table 3). Considering the predictor variables at T2, loneliness was a mediator in the relationship between relationship satisfaction and physical morbidity (mediating effect = -. 051) and psychological (mediator effect = -. 072) and in the relationship between anxiety attachment and physical symptoms (mediator effect = .105) and psychological symptoms (mediator effect=.147).

A total of 18% of the variance in loneliness was explained by relationship satisfaction and anxiety attachment, whereas loneliness explained 10% of physical symptoms and the later 57% of psychological symptoms.

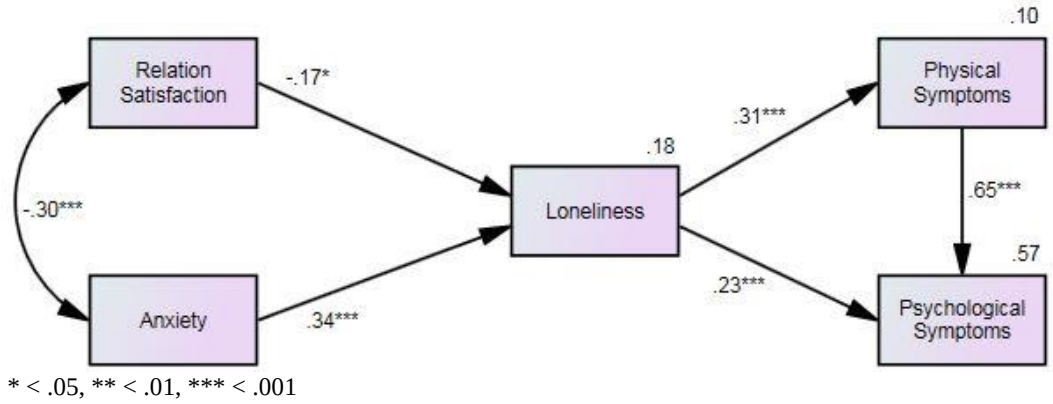


Figure 3. Final model- Independent variables, Mediator and Dependent Variables at T2.Correlations and Standardized coefficients are shown.

Table 3. Moment T2 – Fit indices

Fit indices	Initial model	Final model
X^2 / df	16.366	2.006
CFI	.597	.984
GFI	.865	.985
RMSEA	.271	.069
P (RMSEA<,05)	.000	.261

DISCUSSION

The results of this study are consistent with prior research. Programs teaching communication and conflict resolution skills show significant differences between control and experimental group, on mental health (Askari, Noha, Hassan & Baba, 2013). Teaching communication is the center of skills training approaches and has some benefits for couples such as increasing their relationship satisfaction and these skills are found to be long lasting (for review see, Halford, Markman, Stanley, & Kline, 2003). A meta-analysis of relationship education programs showed larger effect sizes for communication skills than relationship quality (Hawkins, Blanchard, Baldwin & Fawcett, 2008; Taherifard, Omidian & Mobasheri, 2014).

In terms of anxiety attachment, those who did the program revealed less anxiety in their attachment to partners. This may indicate that they felt greater safety in the relationship, one of the themes of the intervention program. In fact, empirical studies have found that attachment

anxiety shows a stronger positive connection with psychological distress than attachment avoidance (Mallinckrodt & Wei, 2005; Wei, Heppner, & Mallinckrodt, 2003) and this may help explain the present results.

Loneliness at T2 mediated the relationship between attachment at T1 (anxious and avoidant) and physical/psychological symptoms at T2. This result emphasizes the importance of attachment for loneliness. In fact at T1, attachment is the only variable that predicts, later loneliness and subsequent physical and psychological symptoms. This result shows that insecure attachment can contribute to physical and psychological distress through loneliness. These results appear to be consistent with the attachment theory assumptions that individuals with insecure attachment have a mental representation of themselves as unworthy and those with avoidant attachment have a negative working model of others lead both not to trust others (Lopez & Brennan, 2000; Mallinckrodt, 2000; Pietromonaco & Feldman Barrett, 2000) and therefore feel lonely and via loneliness their vulnerability for physical and psychological symptoms increases **(**Cacioppo et al,. 2006b).

The results of this study indicated that loneliness mediated the association between relationship satisfaction and physical/psychological symptoms at T2. In fact relationship satisfaction instability has been shown to predict depressive symptoms in cohabiting and married women suggesting that satisfaction instability may precede rather than follow elevated depressive symptoms (Whitton, & Whisman, 2010). This relevant because loneliness has also been associated with depression, (Cacioppo, et al., 2006; Cacioppo, Hawkley, & Thisted, 2010, Heikkinen & Kauppinen, 2004; Wei, Russell, & Zakalik, 2005), sadness, and anxiety. However, there is an assumption that the link between relationship satisfaction and loneliness in married couples might be higher than dating couples because they have fewer barriers to escape from a dissatisfying relationship precipitate loneliness (Flora & Segrin, 2000). Perceived social isolation, commonly termed loneliness may represent the link between social relationships and psychological and physical health. In fact, loneliness impacts health by affecting autonomic, endocrine and immune functioning (Hawkley & Cacioppo, 2002), and studies show a relationship between loneliness and weakened immune defenses against viruses (Pressman et al., 2005), and high systolic blood pressure (Hawkley, Berntson, Burleson, & Cacioppo, 2003). Therefore, it makes intuitive sense the direct paths found from loneliness to physical and psychological symptoms and from physical symptoms to psychological symptoms revealing physical symptoms as a partial mediator in this relationship. In fact, studies have shown a robust association between physical symptoms and mental distress, particularly depression and anxiety, that often express themselves through stomach problems, headaches, backaches, sleeplessness, fatigue, weight loss, or obesity (Friedman, Furst, Williams, 2010). This result supports the notion that loneliness is highly affected by relational factors such as relationship satisfaction. Therefore, subjective evaluations of close relationships are good predictor of loneliness. This result also supports the *need of intimacy* perspective (e.g. Weiss, 1973).

Loneliness at T2 mediated the relationship between anxiety attachment (T2) and physical and psychological symptoms (T2). Attachment theory posits that relationship satisfaction during childhood affect later relationships. Anxious individuals yearning extreme closeness but if their partners' behave in an unpredictable manner, hostility or dependency replace closeness (Berg- Cross, 1997). This finding is consistent with attachment theory that anxiously attached partners are in need of intimacy and closeness and feel much loneliness when they are in need of proximity. Also, anxious partners are afraid of loneliness which prevent them to leave the

relationship (Schachner & Shaver, 2002). This result supported some research (e.g. Givertz, Woszidlo, Segrin, & Knutson, 2013) and is also consistent with the *need of intimacy* perspective of loneliness (e.g. Weiss, 1973).

Interestingly, the direct path from communication patterns and avoidance attachment to loneliness, at T2, were non-significant, emphasizing the importance of satisfaction with the couple relationship over communication. This result supports the need to belong theory that emphasizes the need for individuals to have a common drive to form and maintain a satisfying relationship with significant others (Baumeister & Leary, 1995). This drive seems to have a stronger effect on loneliness than communication patterns and avoidant attachment. Therefore, individuals with problems with relationship satisfaction may be at a higher risk of loneliness. Also, the path from avoidant attachment to loneliness was not significant, emphasizing the importance of anxious attachment on loneliness. This result supports both attachment theory and the need for intimacy theory. In the light of attachment theory, avoidant individuals fear intimacy and closeness and they desire emotional distance and do not trust other people. Therefore, anxious attached partners are highly in need of closeness and this may make them prone to loneliness than avoidant attached people (Wei, Heppner, & Mallinckrodt, 2003).

CONCLUSION

The relationship education program revealed differences between T2 and T1 on communication and anxious attachment showing how important relationship education might be in helping young adults decrease their anxious attachment to partners and increase communication skills.

Loneliness mediated the relationship between attachment (T1) and physical/psychological symptoms as well as between relationship satisfaction/ avoidance attachment (T2) and physical/psychological symptoms showing that attachment and relationship satisfaction can contribute to physical and psychological distress through loneliness.

Therefore, interventions should take in consideration that reducing feelings of loneliness may decrease physical and psychological morbidity.

Social support, training in social skills, communication cooperation with others and enhanced social interest should be included in such interventions in order to strengthen the psychological need for relatedness. However, increasing social support and social interest may not be sufficient because those social activities may fail to address the hypervigilance to social threat and the related cognitive biases that characterize lonely individuals (Hawkley & Cacioppo, 2010). Therefore, interventions need to incorporate attention to mental representations of self and others and factors that have shown to mediate between insecure attachment and distress such as social self-efficacy and emotional awareness (Mallinckrodt & Wei, 2005), capacity for self-reinforcement and need for reassurance from others (Wei, Mallinckrodt, Larson, & Zakalik, 2005), and affect regulation (Wei, Vogel, Ku, & Zakalik, 2005).

Several limitations of this study need be taken into consideration when interpreting its findings. Participants were assessed seven weeks after the intervention began and this period may be enough for changes in communication skills, but too short for change in relationship satisfaction or avoidant attachment. Future studies should replicate the results using

longitudinal data that cover longer periods and that include other populations such as married couples. Such data will allow us to understand how attachment representations operate via loneliness to impact physical and psychological distress. Knowledge of this mechanism, connecting attachment to distress, needs to be applied in daily clinical practice.

Finally, in terms of implications, healthcare systems should be strengthened to improve delivery of mental health care. In fact, mental health awareness needs to be integrated into primary and secondary general health care in order to alleviate the health burden of loneliness.

ACKNOWLEDGMENTS

This research was supported by grant number 90FE0022 from the United States Department of Health and Human Services awarded to Frank Fincham.

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