


Are You Satisfied? Examining Positive Interaction and Satisfaction in Romantic Relationships

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Abstract

Relationship satisfaction has consistently been associated with numerous important intrapersonal, interpersonal, and familial outcomes. In accordance with affection exchange theory, positive interaction between romantic partners should contribute to greater relationship satisfaction. However, what is less understood is the specific theoretical mechanism through which this process might occur. This study's findings reveal that affectionate communication (given and received) positively predicted relationship satisfaction indirectly via the serial mediation of partner commitment and couple quality. This model was tested using a sample of participants of the ELEVATE relationship education program ($N = 2235$). Theoretical and practical implications are discussed, including a call for further exploration of other theoretical pathways that may impact relationship education program evaluation.

Keywords

interpersonal communication, intimate relationships, serial mediation, dyadic relationship/quality/satisfaction, relationship education, affection exchange theory

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Statement of Relevance: In this study, the authors present a theoretically grounded analysis on how affectionate communication (given and received) impacts partner commitment, couple quality, and relationship satisfaction. Relevant for romantic couples and program facilitators alike, this study extends the growing body of interpersonal scholarship offering further demonstration of the relational ramifications of affectionate communication while also highlighting the ability and need to separate couple quality and satisfaction as two distinct constructs.

Introduction

The romantic relationship between two adult partners impacts family functioning across a variety of domains (Hendrick et al., 1988; Noller & Atkin, 2015). As such, the general satisfaction derived from this relationship is of chief concern for family and relationship scholars. Previous research indicates that relationship satisfaction not only impacts familial relationships such as that between romantic partners (Hendrick et al., 1988) and between parent and child (Peltz et al., 2018), but its influence extends to a multitude of other life domains as well, including one's career outlook (Demirtas & Tezer, 2012) and mental health (Whitton & Whisman, 2010). The preeminence of relationship satisfaction is evident in both the vast amount of research examining the construct and through the development of relationship education programs (e.g., ELEVATE) designed to improve couple relationships.

Regarding the influential nature of relationship satisfaction, it is crucial to understand the factors that facilitate or inhibit its development and through which mechanisms this process occurs. A host of factors (e.g. depression, childhood family experiences, stress, and attachment) can impact relationship satisfaction (O'Meara & South, 2019; Randall & Bodenmann, 2017), but affectionate communication is also of central concern. According to affection exchange theory (AET), affectionate communication is key to healthy relational outcomes (Floyd et al., 2018) including satisfaction (Denes et al., 2020). However, more understanding is needed of the specific mechanisms through which this type of communication can cultivate relationship satisfaction. Two such variables are partner commitment (see Pfund et al., 2020) and relationship quality (Farooqi, 2014; Jackson, 2009).

Grounded in AET, this study seeks to examine the direct and indirect effects of positive spousal interaction on relationship satisfaction via the serial mediation of partner commitment and perceived relationship quality. While our study utilizes survey data collection and is thus unable to confirm the causality among these variables (i.e., that partner commitment influences couple quality rather than vice versa), our ordering of variables in our model is theoretically and research-driven and will elucidate one possible (indeed, likely) theoretical process through which AET operates. Additionally, as each

of these variables could be expected to improve because of a participation in a relationship education program focused on communication skills training and mindfulness practices, the effect of the ELEVATE program on each of these variables and the resulting model is also explored. Demographic variables such as age, race, education level, and socioeconomic status are also considered to provide a more comprehensive understanding of what characteristics, if any, impact relationship satisfaction.

Interpersonal Romantic Relationship Satisfaction

Relationship satisfaction is defined as the interpersonal evaluation of positive feelings for one's romantic partner and overall dedication to the relationship (Rusbult & Buunk, 1993). One's happiness and satisfaction with oneself and with their relationship is related to relationship stability (i.e., the likelihood the relationship will endure and remain intact), which is crucial for enhanced relationship quality (Brown et al., 2015).

Historically, satisfaction has been studied either as a predictor of other relationship variables (i.e., levels of love or one's investment or commitment in a relationship) (Hendrick et al., 1988) as well as an outcome of factors such as certain personality traits like extroversion (a positive association) (O'Meara & South, 2019) or stress (a negative association) (Randall & Bodenmann, 2017). The present study is aligned with satisfaction's latter role, conceptualizing it as a key relational outcome, though its significance as such is due in part to its subsequent influence on other relationship outcomes. Through this lens, we can best examine the process by which couples cultivate satisfaction and how relationship interventions (e.g., ELEVATE) can aid in this process. Recognizing the importance of relationship satisfaction in sustaining healthy relationships, it is also critical to ask what factors might be most likely to foster its development. AET provides us with a potential answer: affectionate communication.

Theoretical Foundation: Affection Exchange Theory

Relationships, both romantic and familial, are often initiated and sustained by engaging in affectionate behaviors, including verbal and nonverbal communication practices such as physical contact, using affirming language, and reciprocated supportive action (Floyd et al., 2018). Affectionate acts can often serve as turning points that foster healthy relational development.

Affection exchange theory (AET) posits that humans are innately capable of providing and receiving affection from others. This evolutionary understanding allows researchers to assume adaptive behaviors occur when affection needs are fulfilled, and negative behaviors (e.g., criticism, contempt, defensiveness, stonewalling) (Lisitsa, 2013) occur when these needs go

unfulfilled. At its core, AET posits that affectionate behaviors, such as communication, encourage the creation and long-term maintenance of relationships (Floyd et al., 2018). While it may be easy to think of AET as embodying a “fake-it-till-you-make-it” argument, the understanding and nuance of AET warrants further explication. The theory explicitly assumes that affectionate feelings and actions are two distinct entities. For example, feelings of romantic love for a partner are not a guaranteed result of participating in affectionate acts, just as the reverse is not necessarily true either, illustrating the multidimensional nature of affection and affectionate communication (Floyd et al., 2018).

Positive Interactions as Affectionate Communication. While *affectionate communication* may come to mind first when conceptualizing *affection*, the two constructs are operationally distinct. Affection is the personal experience and/or emotions associated with fondness, while affectionate communication is the act and associated behaviors of expressing fondness and extreme positive regard for another (Floyd & Custer 2020). Affectionate communication is known to enhance positive interaction and foster relationship longevity, deepen relational quality, and increase satisfaction (Denes et al., 2020). Examples of affectionate communication include verbal behaviors (e.g., saying “I love you”), nonverbal gestures (e.g., physical affection), and socially supportive behaviors (e.g., helping with tasks or providing emotional support). Each of these communicative acts assists couples in developing and maintaining close relationships as well as providing beneficial health and wellness outcomes for both partners involved in the affectionate communication exchange (Floyd & Custer, 2020).

Positive Interactions’ Influence on Relationship Satisfaction. There are many reasons for romantic partners to engage in affectionate communication, not the least of which is to enhance emotional bonds and overall relational satisfaction (Floyd & Custer, 2020). Horan and Booth-Butterfield (2010) found that the amount of affection received from one’s romantic partner predicts how satisfied one is in the relationship. Along similar lines, in a two-year, longitudinal study, sexual satisfaction (indicative of one form of positive interaction) positively predicted future relationship satisfaction (Fallis et al., 2016). More generally, Larson and Holman (1994) found that *interactional* processes were more predictive of relationship satisfaction and quality than individual couple traits and the multiple contexts surrounding the relationship. Specifically, positive spousal interaction, along with favorable marriage-specific appraisals and high levels of satisfaction pertaining to social support in the early years of marriage corresponded to high average levels of relationship satisfaction (Kurdek, 2005; Rubin, 1970). Accordingly, it is hypothesized that perceptions

of positive interaction in romantic relationships will be associated with higher relationship satisfaction. Specifically:

H1a: There will be a positive relationship between an individual's perceived positive interaction and relationship satisfaction such that individuals sending greater levels of affectionate communication to their partner will report higher levels of relationship satisfaction.

H1b: There will be a positive relationship between perception of a partner's positive interaction and relationship satisfaction such that individuals receiving greater levels of affectionate communication from their partner will report higher levels of relationship satisfaction.

In addition to the direct relationship between affectionate communication and relationship satisfaction, as hypothesized in line with AET, it is likely that positive interaction also indirectly predicts relationships through a few key mediating variables, most notably commitment and relationship quality.

Commitment

Commitment, specifically in romantic relationships, is defined as the *intention* to remain in a relationship over time (Stanley et al., 2010; Stanley & Markman, 1992). Sustaining a healthy level of commitment requires continual effort from both partners to assimilate to the current state of the relationship and work toward enhanced stability. Expressions of commitment from a romantic partner could include sentiments such as wanting a relationship to stay strong no matter what rough times are encountered, putting in persistent effort to ensure the relationship is maintained, and acknowledging a partner's strengths, as well as expressing the level of importance the relationship holds for both of its members (Rusbult & Buunk, 1993).

It is anticipated that commitment will mediate the relationship between positive interaction and relationship satisfaction. First, previous research has indicated that affectionate communication predicted romantic partners' commitment to one another (Pfund et al., 2020). For example, Horan and Booth-Butterfield (2010) found that giving and receiving affection is positively related to commitment. Additionally, Weigel and colleagues (2011) posited that individuals build and sustain commitment through their everyday communication, particularly through affectionate communication acts, and also found that integrating communication into their everyday lives increased not only commitment but perceptions of positive interaction as well. Second, this commitment has also been found to increase couples' assessments of relationship satisfaction (Farrell et al., 2015; Pfund et al., 2020). Therefore, the following hypotheses are proposed:

H2a: There will be an indirect effect of an individual's perceived positive interaction on relationship satisfaction via commitment, such that greater

affectionate communication sent will increase partner commitment, and partner commitment will be positively related to relationship satisfaction.

H2b: There will be an indirect effect of perception of a partner's positive interaction on relationship satisfaction via commitment, such that greater affectionate communication received will increase partner commitment, and partner commitment will be positively related to relationship satisfaction.

In addition to partner commitment, relationship quality is also likely to mediate the relationship between affectionate communication and satisfaction.

Relationship Quality

Relationship quality is conceptualized and studied from a variety of angles and the term is often rather nebulous in its meaning (Farooqi, 2014). In simplest terms, relationship quality refers to "the positive and negative feelings about a relationship, [and] is an evaluation of the individual's relationship" (Farooqi, 2014, p. 7). For the purposes of the present study, relationship quality is proposed as a second mediator of the relationship between positive interaction and relationship satisfaction.

First, as positive interaction influences a host of relationship outcomes within romantic partnerships (Levenson & Gottman, 1985), relationship quality should be no exception to its influence. Specifically, in a meta-analysis of 37 studies, Jackson (2009) found that premarital couples' positive interaction positively predicted marital relationship quality. Additionally, relationship quality should positively predict relationship satisfaction. Supporting this hypothesized relationship is the fact that as constructs, relationship quality and satisfaction are quite similar (Farooqi, 2014). However, as both terms are used in family and relationship scholarship (sometimes interchangeably and sometimes distinctly), an additional contribution of this paper is to dissolve the ambiguity of the two constructs and clarify their relationship to one another. Logically, if one feels their romantic relationship is of high quality, this appraisal is likely to lead to greater relationship satisfaction. Therefore, it is hypothesized that relationship quality will mediate the positive interaction—relationship satisfaction association in the following ways:

H3a: There will be an indirect effect of an individual's perceived positive interaction on relationship satisfaction via relationship quality, such that greater affectionate communication sent will increase relationship quality, and relationship quality will be positively related to relationship satisfaction.

H3b: There will be an indirect effect of perception of a partner's positive interaction on relationship satisfaction via relationship quality, such that greater affectionate communication received will increase relationship quality, and relationship quality will be positively related to relationship satisfaction.

In addition to the mediation hypotheses described above, commitment and relationship quality together could represent an important sequence through which affectionate communication affects relationship satisfaction as previous research has found a positive association between commitment and quality (Rauer et al., 2014; Weigel et al., 2011). As such, it is hypothesized that partners with higher commitment can be expected to enjoy a higher level of quality in their relationship, and affectionate communication could indirectly predict satisfaction via the serial mediation of commitment and quality. Therefore:

H4a: There will be a serial indirect effect of an individual's perceived positive interaction on relationship satisfaction via commitment and relationship quality, such that greater affectionate communication sent will increase commitment, which will increase relationship quality, which will be positively related to relationship satisfaction.

H4b: There will be a serial indirect effect of perception of a partner's positive interaction on relationship satisfaction via commitment and relationship quality, such that greater affectionate communication received will increase commitment, which will increase relationship quality, which will be positively related to relationship satisfaction.

Methods

Procedure

Recruitment Details and Program Requirements. Participants were recruited to the ELEVATE program as part of the larger SMART Couples relationship education curriculum, which is a multi-million-dollar federal grant project with the goal to strengthen marriages, relationships, and families across ethnicities and income levels (SMART Couples, 2021). Grounded in the National Extension Relationship and Marriage Education Model, ELEVATE is a couples education program curriculum that aims to enhance healthy relationship knowledge and tactics through utilizing practical skills informed through evidence-based scholarship (Bodenlos et al., 2021). This program was adapted from the Healthy Relationship and Marriages Education Training, with the development of the program supported by funding from the Federal Children's Bureau. ELEVATE is a free course for marital and premarital couples that includes eight modules covering a range of relationship-supporting content.

Adults were recruited by SMART Couples Project supervisors and employees through social media (e.g., Facebook), media outlets (e.g., newspaper and radio), email listservs, word-of-mouth, flyers, brochures, and collaborating with partners in the community. All workshops included in ELEVATE, the pretest at intake (grant years 1–3), and retrospective pretest-then-posttest

survey (grant years 1–5) must have been completed to be included in the current study.

Data Collection

Following Institutional Review Board approval from the authors' institution, all required IRB informed consent, demographic, case management, and outcome data were collected and managed electronically using Qualtrics between June 2016 and September 2020. Limited cases of data collection occurred using pencil-and-paper surveys which were later entered into the Qualtrics database by SMART staff. Any participant who did not answer at least $\frac{2}{3}$ of items composing every scale was removed from the dataset ($n = 218$).

Data was collected at two timepoints across participant enrollment and completion of ELEVATE: a traditional pretest survey prior to participating and a retrospective pretest-then-posttest electronic survey. These surveys assessed participants' knowledge, confidence, and behavior change at the end of the SMART Couples program. Demographic data was collected and managed using the federal Applicant Characteristics Survey (ACS) and stored in their database (nFORM). This study reports the retrospective pretest-then-posttest survey results only. Posttest results can be accessed at our open science framework page (<https://tinyurl.com/2p8dnyd2>). Each participant represents one romantic relationship (i.e., this study does not report dyadic data).

Justifying the Retrospective Pretest-then-Posttest Design

Community-based education programs require uniquely tailored evaluation tools to accurately capture participant attitudes, behaviors, and skills across multiple time points. The traditional experimental pretest-posttest design (TEPPD) is highly regarded as the gold standard method for measuring change in individuals (Campbell & Stanley, 1966; Kaplan, 2004), yet it is accompanied by several limitations that hinder its effectiveness, specifically in studying and evaluating education programs. In order to adequately justify the use of the retrospective pretest-then-posttest design, it is important to first address the TEPPD and its limitations in social science research.

The TEPPD is highly regarded due to its control over internal validity concerns and its capacity to compare results from the same people or groups of people at various periods. Despite this, it encounters several issues in community education settings such as finding and maintaining an adequate comparison group. This design is often challenging to employ in social science research due to a lack of resources and time available for community-based programs to complete comprehensive comparisons (Brooks & Gersh, 1998). Additionally, participants must attend the full program from start to finish (Pratt et al., 2000) for TEPPD comparisons to remain valid. As attrition

and sporadic attendance are common issues (Pratt et al., 2000), the TEPPD becomes increasingly difficult to utilize in such settings.

In addition to difficulties collecting complete information for comparisons, researchers may also encounter issues when assessing the actual changes in attitudes, behaviors, or skills if program participants overstate their pretest responses (Howard & Dailey, 1979; Moore & Tananis, 2009). This over-appraisal may happen when participants do not hold an adequate perception of the variables the program is targeting (Pratt et al., 2000). Limited knowledge pertaining to certain topics is often what such programs aim to address, but through this process participants may realize they knew even less than they originally thought when completing the pretest. Because of this, researchers must remain vigilant of potentially misleading information between the pretest and posttest comparisons due to participants' perspective shift (Howard & Dailey, 1979). Response shift bias, along with the issues mentioned prior, must be considered thoroughly when reviewing results from TEPPD comparisons.

In sum, while the retrospective pretest-then-posttest design encounters several internal validity threats, this design mitigates many of the issues seen in the TEPPD. While it can be seen as subjective in nature, a retrospective pretest-then-posttest design provides participants the ability to adequately self-assess their perceived changes in attitudes, beliefs, and skills learned throughout the given education program by comparing each individual variable side-by-side upon program completion.

Participants

The sample ($N = 2235$) was 51.2% female (with .4% not reporting their gender) with participants from ages 18 to 87 ($M = 38.82$; $SD = 12.79$). When self-reporting their race, 67.5% identified as White, 17.8% identified as Black or African American, 5.9% identified as "Other," 4% identified as mixed race, 3.4% identified as Asian, .6% did not identify their race, .5% identified as American Indian/Native Alaskan, and .4% identified as Native Hawaiian/other Pacific Islander. Ethnically, our sample was 82.9% Non-Hispanic/Non-Latino, with .4% of participants declining to report ethnicity. Additionally, 59.3% were married, 22.1% had never married, 9% were engaged, 7.5% were divorced, 1.2% were separated, .6% did not report their marital status, and .4% were widowed. Of the 689 participants who provided their cohabitation status,¹ 53.6% reported living together all the time, 17.3% none of the time, 16% some of the time, and 13.2% most of the time.

Measures

Independent Variables

Positive Interaction. To assess participants' perceptions of the affectionate communication they were sending to their partners, a scale (titled *Show You*

Care - Self) was adapted from items used by Huston and Vangelisti (1991) and Buhrmester and colleagues (1988). The scale included five Likert-type items on a seven-point scale (1 = "never," 7 = "more often than once a day"). Sample items included "Do something nice for your partner" and "Tell your partner things you appreciate about them and how much you care for them." These five items measuring positive interaction were combined into a reliable index (retrospective pretest: Cronbach's $\alpha = .87$; $M = 5.30$; $SD = 1.24$; posttest: Cronbach's $\alpha = .86$; $M = 5.89$; $SD = 1.02$). A two-tailed paired sample *t*-test revealed a significant difference between the retrospective pretest and posttest scores for positive interaction, $t(2,234) = -36.60$, $p < .001$, Cohen's $d = -0.77$, indicating an increased moderate² standardized mean effect size change from before to after ELEVATE program participation in respondents' perceptions of affectionate communication sent to their partner.

Partner's Positive Interaction. To measure participants' perceptions of affectionate communication received from their partners, a scale (titled *Show You Care - Partner*) was adapted from items from Huston and Vangelisti (1991) and Buhrmester and colleagues (1988). This scale was identical to the *Show You Care - Self* except for slight alterations in wording to reflect that the participant was on the receiving end of their partner's positive interaction (e.g., "Do something nice for you."). These five items measuring perception of positive interaction received from one's partner were combined into an index, which was reliable (retrospective pretest: Cronbach's $\alpha = .87$; $M = 5.20$; $SD = 1.33$; posttest: Cronbach's $\alpha = .87$; $M = 5.72$; $SD = 1.16$). A two-tailed paired sample *t*-test revealed a significant difference between the retrospective pretest and posttest scores for positive interaction received from partner, $t(2,234) = -32.23$, $p < .001$, Cohen's $d = -0.68$, indicating an increased moderate standardized mean effect size change from before to after ELEVATE program participation in respondent's perceptions of affectionate communication received from their partner.

Dependent Variable

Relationship Satisfaction. Participants' satisfaction with their romantic relationship was measured through three Likert-type items on a seven-point scale (1 = "very strongly disagree," 7 = "very strongly agree"). These items included "I am very satisfied with my relationships in my home," "I am very satisfied with who I am (my relationship with myself)," and "I am very satisfied with my relationship with my partner/spouse." These three items were combined into an index, which was found to have very good internal reliability (retrospective pretest: Cronbach's $\alpha = .88$; $M = 4.91$; $SD = 1.44$; posttest: Cronbach's $\alpha = .87$; $M = 5.62$; $SD = 1.21$). A two-tailed paired sample *t*-test revealed a significant difference between the retrospective pretest and posttest scores for relationship satisfaction, $t(2,234) = -34.72$, $p < .001$,

Cohen's $d = -0.73$, indicating a moderate standardized mean effect size change from before to after ELEVATE program participation in respondent's relationship satisfaction.

Mediators

Commitment. Participants' level of commitment to their current romantic relationship was measured through six Likert-type items on a seven-point scale (1 = "very strongly disagree," 7 = "very strongly agree") encompassing three items adapted from [Stanley and Markman \(1992\)](#) and three items developed for the ELEVATE program specifically. Items included "My relationship with my partner is more important to me than almost anything else in my life," and "I commit effort every day to making my relationship work." These six items were combined and formed a reliable index (retrospective pretest: Cronbach's $\alpha = .82$; $M = 5.38$; $SD = 1.07$; posttest: Cronbach's $\alpha = .79$; $M = 6.05$; $SD = .87$). A two-tailed paired sample t -test revealed a significant difference between the retrospective pretest and posttest scores for commitment, $t(2,234) = -42.40$, $p < .001$, Cohen's $d = -0.90$, indicating a strong standardized mean effect size change from before to after ELEVATE program participation in respondent's level of commitment.

Couple Relationship Quality. To assess the quality of participants' relationships, three Likert-type items on a seven-point scale (1 = "very strongly disagree," 7 = "very strongly agree") were used from [Norton's \(1983\)](#) scale for measuring marital quality. These items included "We have a good relationship," "Our relationship is strong," and "My relationship makes me happy." These three items measuring couple quality formed a reliable index (retrospective pretest: Cronbach's $\alpha = .95$; $M = 5.13$; $SD = 1.42$; posttest: Cronbach's $\alpha = .95$; $M = 5.87$; $SD = 1.16$). A two-tailed paired sample t -test revealed a significant difference between the retrospective pretest and posttest scores for couple quality, $t(2,234) = -35.96$, $p < .001$, Cohen's $d = -0.76$, indicating an increased moderate standardized mean effect size change from before to after ELEVATE program participation in respondents' perception of the quality of their relationship. See [Figure 1](#) for full conceptual model.

Control Variables. To ensure the consideration of possible confounding variables on the model's performance, several additional variables were measured as control variables. In addition to marital status, age, race, and gender (reported above), socioeconomic status and number of children were also included. Regarding income, participants indicated the following income from the 30 days immediately prior to reporting: 18.9% reported earning between \$2001 and \$3000; 17.4% between \$1001 and \$2000; 15.7% less than \$500; 14.5% more than \$5000; 13.9% between \$3001 and \$4000; 9.1% between \$4001 and \$5000; 8% between \$500 and \$1000; and 2.4% did not

report their weekly income. The number of children reported by participants ranged from 0 to 12 ($M = .99$, $SD = 1.36$), with 56 (2.5%) of participants not reporting how many children they had.

Data Analysis

Serial mediation models were conducted using Model 6 of the PROCESS macro for SPSS with 5000 bootstrapped samples and 95% bias-adjusted confidence intervals. To evaluate our retrospective pretest model based on AET, the retrospective pretest scores were used in a set of serial mediation models (i.e., run once for each independent variable of positive interaction sent and positive interaction received from partner), described next. Additional posttest models are presented in a supplementary results section on the open science framework (<https://tinyurl.com/2p8dnyd2>). Aggregate descriptive statistics can be found in Table 1, and bivariate correlations can be seen in Table 2.

Results

Positive Interaction's Effect on Satisfaction

A serial mediation model was conducted³ with positive interaction as the independent variable, satisfaction as the dependent variable, and partner

Table 1. Descriptive Data for Variables included in Model.

Variable	Mean	SD	Range	Scale Reliabilities (Cronbach's α)
Positive interaction				
Retrospective pre-test	5.30	1.24	1.00–7.00	.87
Post-test	5.89	1.02	1.00–7.00	.86
Partner's positive interaction				
Retrospective pre-test	5.20	1.33	1.00–7.00	.87
Post-test	5.72	1.16	1.00–7.00	.87
Relationship satisfaction				
Retrospective pre-test	4.91	1.44	1.00–7.00	.88
Post-test	5.62	1.21	1.00–7.00	.87
Commitment				
Retrospective pre-test	5.38	1.07	1.17–7.00	.82
Post-test	6.05	.87	1.00–7.00	.79
Couple relationship quality				
Retrospective pre-test	5.13	1.42	1.00–7.00	.95
Post-test	5.87	1.16	1.00–7.00	.95

Table 2. Means, standard deviations, and correlations.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Positive interaction towards partner	5.30	1.24				
2. Positive interaction from partner	5.20	1.33	.73***			
3. Partner commitment	5.38	1.07	.55***	.45***		
4. Couple quality	5.13	1.42	.60***	.62***	.67***	
5. Relationship satisfaction	4.91	1.44	.52***	.53***	.59***	.78***

*** $p < .001$.

commitment and couple quality as mediators (using retrospective pretest data). First, the direct effect of positive interaction on relationship satisfaction independent of couple commitment and quality was significant (direct effect = .06, $SE = .02$, $p = .01$); thus, H1a was supported.

Indirect Effect via Commitment. The indirect effect of positive interaction sent on relationship satisfaction via commitment was significant (indirect effect = .08, $SE = .01$, 95% CI [.05, .11]). As shown in Figure 2, positive interaction sent and partner commitment were positively related ($\beta = .47$, $SE = .02$, $p < .001$). Additionally, partner commitment and relationship satisfaction were positively related ($\beta = .17$, $SE = .02$, $p < .001$). H2a was thus supported.

Indirect Effect via Quality. The indirect effect of positive interaction sent on relationship satisfaction via couple quality was also significant (indirect effect = .26, $SE = .02$, 95% CI [.22, .29]). Specifically, there were significant, positive relationships between positive interaction sent and couple quality ($\beta = .38$, $SE = .02$, $p < .001$), and between couple quality and relationship satisfaction ($\beta = .67$, $SE = .02$, $p < .001$). Therefore, H3a was supported.

Serial Mediation Model. Additionally, the indirect effect of positive interaction sent on relationship satisfaction via partner commitment and couple quality was significant (indirect effect = .21, $SE = .01$, 95% CI [.18, .24]). In addition to the positive relationships between positive interaction sent and partner commitment and between couple quality and relationship satisfaction (reported above), there was a positive, significant relationship between partner commitment and couple quality ($\beta = .65$, $SE = .02$, $p < .001$). H4a was thus supported.

Effect of Positive Interaction Received on Satisfaction

A second serial mediation model (this time with positive interaction received as the independent variable) was conducted. The direct effect of positive interaction received from partner on relationship satisfaction independent of

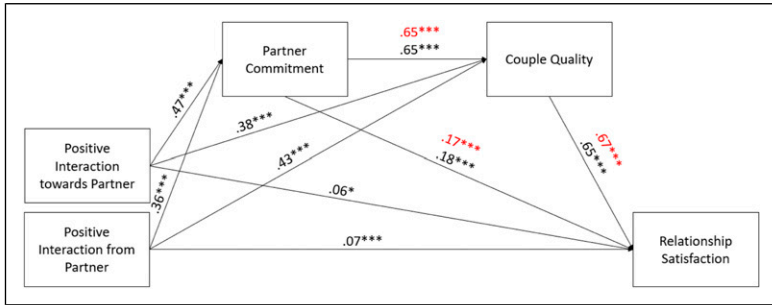


Figure 1. Serial mediation model of positive interaction's effect on Relationship satisfaction.

Note. Top line in red is effects from the model run with the first IV (positive interaction given), and the second black line is effects from model run with the second IV (positive interaction received from partner). * $p < .05$; *** $p < .001$.

partner commitment and couple quality was significant (direct effect = .07, SE = .02, $p = .0001$); thus, H1b was supported.

Indirect Effect via Commitment. The indirect effect of positive interaction received from partners on evaluations of relationship satisfaction via commitment was significant (indirect effect = .06, SE = .01, 95% CI [.05, .09]). As shown in Figure 2, positive interaction received and partner commitment were significantly, positively related ($\beta = .36$, SE = .02, $p < .001$), and partner commitment was significantly, positively related to relationship satisfaction ($\beta = .18$, SE = .02, $p < .001$). Thus, H2b was supported.

Indirect Effect via Quality. The indirect effect of positive interaction received and relationship satisfaction via quality was significant (indirect effect = .28, SE = .02, 95% CI [.24, .31]). Specifically, both the relationships between positive interaction received and couple quality ($\beta = .43$, SE = .02, $p < .001$) and between couple quality and relationship satisfaction ($\beta = .65$, SE = .02, $p < .001$) were positive and significant. H3b was therefore supported.

Serial Mediation Model. Lastly, the indirect effect of positive interaction received from partner on relationship satisfaction via partner commitment and couple quality was significant (indirect effect = .15, SE = .01, 95% CI [.13, .18]). In addition to the positive relationships between positive interaction received and partner commitment and between couple quality and relationship satisfaction (reported above), there was a positive, significant relationship between partner commitment and couple quality ($\beta = .65$, SE = .02, $p < .001$). Thus, H4b was supported.

Addition of Control Variables. To ensure that the retrospective pretest data model held when accounting for our control variables (i.e., age, race, gender, marital status, income, and children), the model described above was run once again in PROCESS using Model 6, this time with all controls entered as covariates. Even with these control variables, the indirect effect via commitment, the indirect effect via quality, and the serial mediation effect were all still significant (and positive) for both the model with the independent variable of positive interaction and the model with the independent variable of positive interaction received.

Discussion

Principal Findings

The present study makes several notable contributions to both our theoretical understanding of affectionate communication's influence within romantic relationships and practical insight into the relationships between such communication and individuals' relationship perceptions. Specifically, positive interaction (both given and received) positively predicted relationship satisfaction directly, indirectly via couple commitment, indirectly via couple quality, and serially via couple commitment and quality.

Theoretical Implications

Our study provides a novel lens through which to understand precise, theoretically grounded mechanisms through which affectionate communication ultimately results in relationship satisfaction. First, our model further explicates the process whereby AET operates within romantic relationships, ultimately influencing relationship satisfaction (i.e., via partner commitment and couple quality). While previous research (e.g., Kurdek, 2005; Rubin, 1970) revealed affectionate communication and relationship satisfaction are positively correlated (Floyd & Custer, 2020), it remained unclear through what precise theoretical pathway this affectionate communication ultimately achieved this positive relational outcome. Our model provides empirically tested results from one such possible pathway.

Second, our model addressed the need for clearer distinction between couple quality and commitment (Rauer et al., 2014; Weigel et al., 2011). Specifically, our model revealed notable differences in effects (though all were significant) between the relationships of positive interaction and couple quality and between positive interaction and relationship satisfaction (see Figure 1. The fact that couple quality and relationship satisfaction were correlated (see Table 2) and that these different relationships between positive interaction and 1) couple quality and 2) relationship satisfaction were different

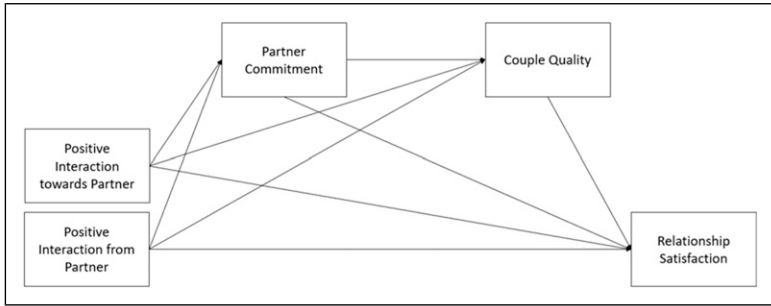


Figure 2. Hypothesized serial mediation model.

reiterate why the distinction between these constructs is so crucial, though at times messy. Couple quality improved as positive interaction increased, and this improved couple quality positively predicted higher relationship satisfaction. Couple commitment also positively predicted couple quality, subsequently positively predicting relationship satisfaction. Future research should continue separating these constructs to better understand their relationship and appropriateness for use in future work on romantic relationships. On a related note, it is also important to acknowledge that commitment is often associated with trust (e.g., [Juarez & Pritchard, 2012](#)) and affectionate communication with intimacy (e.g., [Reis & Shaver, 1988](#)). The assessment of partner commitment and affectionate communication in the present model thus provides a useful set of comparable constructs for scholars studying trust and intimacy while utilizing the more measurable constructs (and their operationalized scales) of commitment and affectionate communication.

Practical Implications

Practically speaking, the resulting model also offers important applications for both couples and relationship science practitioners. First, our results should encourage couples on the basis that making simple gestures of affection towards their partner (e.g., saying “I love you” or offering a hug) can have quite the ripple effect on their relationship quality and ultimately the satisfaction they experience within the relationship. Anyone (regardless of socioeconomic status, education level, number of children, or even the current status of the relationship—can choose to give these small offerings of affection to their partner. While AET informs us that affectionate behavior and feelings are not inherently and vehemently linked, they do typically occur together ([Denes et al., 2017](#); [Floyd, 2006](#); [Floyd et al., 2018](#)) as evidenced by our results. These small acts and words can have major benefits, especially considering relationship satisfaction’s myriad of other known correlates (e.g.,

Demirtas & Tezer, 2012; Hendrick et al., 1988; Peltz et al., 2018; Whitton & Whisman, 2010).

Accordingly, then, therapists working with couples should encourage romantic partners to proactively increase the amount of affectionate communication (both verbal and non-verbal) they provide to their partners as these words and actions are positively correlated in our study with greater levels of commitment, relationship quality, and satisfaction (see Table 2). While this study does not advocate approaching romantic relationships with a “fake-it-till-you-make-it” mentality, empirical evidence is abounding with support for the notion that affectionate gestures, however small, can manifest in significant positive ways for couples (Demirtas & Tezer, 2012; Hendrick et al., 1988; Peltz et al., 2018; Whitton & Whisman, 2010). Finally, it is the authors’ aim that this retrospective pretest model will serve future relationship scholars well as an explanatory and predictive mechanism given that much of interpersonal communication research does not utilize intervention data (e.g., Chang et al., 2018; Mesman et al., 2022).

Limitations and Future Directions

This research has limitations that should be noted. First, given the cross-sectional data collected and the regression-based modeling technique employed for data analysis, causality was not able to be proven regarding the model’s directionally. This model provides *one* theoretically grounded and research-based possibility of the pathway in which affectionate communication may influence relationship satisfaction, but this is not to say this study advocates this is the *only* way in which to achieve this end (see Hou et al., 2018 for alternate pathway). Given the persistently fluctuating nature of romantic relationships, it makes logical sense there may be multiple avenues to achieve enhanced relationship satisfaction or have satisfaction act as a vehicle to influence other relational outcomes. However, our model ordering was intentionally designed in line with previous research and theory highlighting the impact of utilizing various communication skills on overall relational health and functioning (Cutrona, 1996; Falconier et al., 2015). Future studies should carefully consider employing different quantitative methods, including structural equation modeling, to continue exploring the causal directionality of such romantic relationship phenomena.

Additionally, only one individual’s perception of their relationship (vs. dyadic data reports) was assessed across the ELEVATE program. When analyzing what constitutes a healthy relationship, it is important to examine both members’ experiences to ascertain the most holistic understanding of relational dynamics, both before and after an intervention (Goodboy & Kashy, 2017); thus, future research should consider collecting both partners’ perspectives. Additionally, robust sample sizes are more likely to result in

significant p values (Lantz, 2012). However, the sample reported here was carefully and conservatively cleaned to only include those who completed the full ELEVATE program. On average, individuals completed four out of eight modules, indicating ineligibility for this study. As a result, 2357 people were excluded from the final analysis.

For these analyses, a retrospective pre-then-posttest survey design was utilized. This type of data collection has been shown to reduce participant bias reporting their perceived degree of knowledge prior to participating in an intervention, known as response shift bias (Campbell & Stanley, 1966; Kaplan, 2004), although future studies should consider utilizing this analysis method to verify internal validity. Even so, data collected throughout the ELEVATE program was self-reported and was thus susceptible to social desirability bias (Althubaiti, 2016). An additional methodological consideration addresses the relative lack of explicitly measured variables examining emotional affection (i.e., fondness of the partner). Individual items in the positive interaction variables encompass this notion of fondness (e.g., “Tell your partner things you appreciate about them and how much you care for them”), but future studies should consider testing this construct more overtly. Finally, an important limitation to consider when analyzing data from education programs are the various selection effects that may influence data generalizability. Previous research indicates that certain people who choose to participate in these programs are often not representative of populations at higher risk of negative relationship outcomes (Carlson et al., 2020). For example, those who have resources to participate (e.g., free time, reliable transportation, access to childcare, higher socioeconomic status) are more likely to attend than those with fewer resources (Carlson et al., 2020).

Conclusion

The present study offers a theoretical exploration of a commonly assumed relationship between positive interaction and relationship satisfaction. By distinguishing couple quality from relationship satisfaction, the model presented here deepens the understanding of a specific theoretical mechanism through which this specific form of romantic partner communication (i.e., positive interaction) can result in partner satisfaction with the relationship. This understanding is of paramount importance when developing, testing, and tailoring resources for couples. As, ultimately, this satisfaction is particularly important for individuals, couples, and families more broadly (Brown et al., 2015; Hendrick et al., 1988), programs should prioritize the discussion of affectionate communication and commitment in their content. Future research will be able to further explicate these relational processes and assist in the continued support, enhancement, and validation of these vital relationship education programs.

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Notes

1. Participants who reported a “Married” relationship status in the ACS demographics survey were not asked to report their cohabitation status, thus explaining the low number of participants reporting their living situation.
2. All effect size categorizations (e.g., as weak, moderate, or strong) are based on Cohen (1988).
3. All serial mediation models reported in this study used the same statistical settings reported here (i.e., Model 6, with 5000 bootstrapped samples, and 95% bias adjusted confidence intervals).

References

- Althubaiti, A. (2016). Information bias in health research: definition, pitfalls, and adjustment methods. *Journal of Multidisciplinary Healthcare*, 9(9), 211–217. <https://doi.org/10.2147/JMDH.S104807>
- Bodenlos, K., McNerny, & Friend, D.. (2021). Providing healthy marriage and relationship education programs virtually: Lessons from a case study of the EL-EVATE program in Florida. In *OPRE, Office of Planning, Research, and Evaluation, Administration for Children and Families*, U.S. Department of Health and Human Services. <https://ifas.ufl.edu/media/smartcouplesifasufledu/docs-2/pdf/ELEVATE-virtual-programming.pdf>
- Brooks, L., & Gersh, T. L. (1998). Assessing the impact of diversity initiatives using the retrospective pretest design. *Journal of College Student Development*, 34(1), 383–386.

- Brown, S., Manning, W. D., & Payne, K. K. (2017). Relationship quality among cohabiting versus married couples. *Journal of Family Issues*, 38(12), 1730–1753. <https://doi.org/10.1177/0192513X15622236>
- Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, 55(6), 991–1008. <https://doi.org/10.1037/0022-3514.55.6.991>
- Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research*. Rand McNally.
- Carlson, R. G., Wheeler, N. J., Liu, X., Hipp, C., & Daire, A. P. (2020). The relationship between social support and family relationships among low-income couples attending relationship education. *Family Process*, 59(4), 1498–1516. <https://doi.org/10.1111/famp.12499>
- Chang, Y. S., Coxon, K., Portela, A. G., Furuta, M., & Bick, D. (2018). Interventions to support effective communication between maternity care staff and women in labour: A mixed-methods systematic review. *Midwifery*, 59(1), 4–16. <https://doi.org/10.1016/j.midw.2017.12.014>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. (2nd ed). L. Erlbaum Associates.
- Cutrona, C. E. (1996). *Social support in couples: Marriage as a resource in times of stress*. Sage Publications, Inc. <https://doi.org/10.4135/9781483327563>
- Demirtas, S. C., & Tezer, E. (2012). Romantic relationship satisfaction, commitment to career choices and subjective well-being. *Procedia - Social and Behavioral Sciences*, 46(1), 2542–2549. <https://doi.org/10.1016/j.sbspro.2012.05.519>
- Denes, A., Bennett, M., & Winkler, K. L. (2017). Exploring the benefits of affectionate communication: Implications for interpersonal acceptance–rejection theory. *Journal of Family Theory & Review*, 9(4), 491–506. <https://doi.org/10.1111/jftr.12218>
- Denes, A., Crowley, J. P., Winkler, K. L., Dhillon, A., Ponivas, A. L. P., & Bennett, M. (2020). Exploring the effects of pillow talk on relationship satisfaction and physiological stress responses to couples' difficult conversations. *Communication Monographs*, 87(3), 267–290. <https://doi.org/10.1080/03637751.2020.1726424>
- Falconier, M. K., Jackson, J. B., Hilpert, P., & Bodenmann, G. (2015). Dyadic coping and relationship satisfaction: A meta-analysis. *Clinical Psychology Review*, 42(2), 28–46. <https://doi.org/10.1016/j.cpr.2015.07.002>
- Fallis, E. E., Rehman, U. S., Woody, E. Z., & Purdon, C. (2016). The longitudinal association of relationship satisfaction and sexual satisfaction in long-term relationships. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 30(7), 822–831. <https://doi.org/10.1037/fam0000205>
- Farooqi, S. R. (2014). The construct of relationship quality. *Journal of Relationships Research*, 5(2), e2–e11. <https://doi.org/10.1017/jrr.2014.2>
- Farrell, J. E., Hook, J. N., Ramos, M., Davis, D. E., Van Tongeren, D. R., Ruiz, J. M., & Ruiz, J. M. (2015). Humility and relationship outcomes in couples: The mediating

- role of commitment. *Couple and Family Psychology: Research and Practice*, 4(1), 14–26. <https://doi.org/10.1037/cfp0000033>
- Floyd, K. (2006). *Communicating affection: Interpersonal behavior and social context*. Cambridge University Press.
- Floyd, K., & Custer, B. E. (2020). *Affection exchange theory*. *Oxford research encyclopedia of communication*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228613.013.937>
- Floyd, K., Hesse, C., & Generous, M. A. (2018). Affection Exchange theory: A bio-evolutionary look at affectionate communication. *Engaging theories in family communication: Multiple perspectives* (2nd ed., pp. 17–26). Routledge.
- Goodboy, A. K., & Kashy, D. A. (2017). Interpersonal communication research in instructional contexts: A dyadic approach. *Communication Education*, 66(1), 113–115. <https://doi.org/10.1080/03634523.2016.1221515>
- Hendrick, S. S., Hendrick, C., & Adler, N. L. (1988). Romantic relationships: Love, satisfaction, and staying together. *Journal of Personality and Social Psychology*, 54(6), 980, 988. <https://doi.org/10.1037/0022-3514.54.6.980>
- Horan, S. M., & Booth-Butterfield, M. (2010). Investing in affection: An investigation of affection exchange theory and relational qualities. *Communication Quarterly*, 58(4), 394–413. <https://doi.org/10.1080/01463373.2010.524876>
- Hou, Y., Jiang, F., & Wang, X. (2019). Marital commitment, communication and marital satisfaction: An analysis based on actor-partner interdependence model. *International journal of psychology: Journal international de psychologie*, 54(3), 369–376. <https://doi.org/10.1002/ijop.12473>
- Howard, G. S., & Dailey, P. R. (1979). Response-shift bias: A source of contamination of self report measures. *Journal of Applied Psychology*, 64(2), 144–150. <https://doi.org/10.1037/0021-9010.64.2.144>
- Huston, T. L., & Vangelisti, A. L. (1991). Socioemotional behavior and satisfaction in marital relationships: A longitudinal study. *Journal Of Personality and Social Psychology*, 61(5), 721–733. <https://doi.org/10.1037/0022-3514.61.5.721>
- Jackson, J. B. (2009). *Premarital couple predictors of marital relationship quality and stability: A meta-analytic study*. (Publication No. 3380523) [Doctoral Dissertation. Brigham Young University].
- Juarez, L., & Pritchard, M. (2012). Body dissatisfaction: Commitment, support, and trust in romantic relationships. *Journal of Human Behavior in the Social Environment*, 22(2), 188–200. <https://doi.org/10.1080/10911359.2012.647478>
- Kaplan, D. (2004). *The Sage handbook of quantitative methodology for the social sciences*. Sage.
- Kurdek, L. (2005). Gender and marital satisfaction early in marriage: A growth curve approach. *Journal of Marriage and Family*, 67(1), 68–84. <https://doi.org/10.1111/j.0022-2445.2005.00006.x>
- Lantz, B. (2013). The large sample size fallacy. *Scandinavian Journal of Caring Sciences*, 27(2), 487–492. <https://doi.org/10.1111/j.1471-6712.2012.01052.x>

- Larson, J. H., & Holman, T. B. (1994). Premarital predictors of marital quality and stability. *Family Relations*, 43(2), 228–237. <https://doi.org/10.2307/585327>
- Levenson, R. W., & Gottman, J. M. (1985). Physiological and affective predictors of change in relationship satisfaction. *Journal of Personality and Social Psychology*, 49(1), 85–94. <https://doi.org/10.1037/0022-3514.49.1.85>
- Lisitsa, E. (2013). *The four horsemen: Criticism, contempt, defensiveness, and stonewalling*. The Gottman Institute. <https://www.gottman.com/blog/the-four-horsemen-recognizing-criticism-contempt-defensiveness-and-stonewalling/>
- Mesman, M., Hendriks, H., Onrust, S., Neijens, P., & van den Putte, B. (2022). The antecedents and consequences of interpersonal communication during a school-based health intervention. *Health Communication*, 37(1), 114–124. <https://doi.org/10.1080/10410236.2020.1824664>
- Moore, D., & Tananis, C. A. (2009). Measuring change in a short-term educational program using a retrospective pretest design. *American Journal of Evaluation*, 30(2), 189–202. <https://doi.org/10.1177/1098214009334506>
- Noller, P., & Atkin, S. (2015). *Family life in adolescence*. De Gruyter Open.
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45(1), 141–151. <https://doi.org/10.2307/351302>
- O'Meara, M. S., & South, S. C. (2019). Big Five personality domains and relationship satisfaction: Direct effects and correlated change over time. *Journal of Personality*, 87(6), 1206–1220. <https://doi.org/10.1111/jopy.12468>
- Peltz, J. S., Rogge, R. D., & Sturge-Apple, M. L. (2018). Transactions within the family: Coparenting mediates associations between parents' relationship satisfaction and the parent-child relationship. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 32(5), 553–564. <https://doi.org/10.1037/fam0000413>
- Pfund, G. N., Brazeau, H., Allemand, M., & Hill, P. L. (2020). Associations between sense of purpose and romantic relationship quality in adulthood. *Journal of Social and Personal Relationships*, 37(5), 1563–1580. <https://doi.org/10.1177/0265407520903807>
- Pratt, C. C., McGuigan, W. M., & Katzev, A. R. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation*, 21(3), 341–349. <https://doi.org/10.1177/109821400002100305>
- Randall, A. K., & Bodenmann, G. (2017). Stress and its associations with relationship satisfaction. *Current Opinion in Psychology*, 13(2), 96–106. <https://doi.org/10.1016/j.copsyc.2016.05.010>
- Rauer, A. J., Adler-Baeder, F., Lucier-Greer, M., Skuban, E., Ketring, S. A., & Smith, T. (2014). Exploring processes of change in couple relationship education: Predictors of change in relationship quality. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 28(1), 65–76. <http://dx.doi.org/10.1037/a0035502>

- Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. W. Duck (Ed.), *Handbook of personal relationships* (pp. 367–389). John Wiley & Sons Ltd.
- Rubin, Z. (1970). Measurement of romantic love. *Journal of Personality and Social Psychology*, 16(2), 265–273. <https://doi.org/10.1037/h0029841>
- Rusbult, C. E., & Buunk, B. P. (1993). Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Personal Relationships*, 10(2), 175–204. <https://doi.org/10.1177/026540759301000202>
- SMART Couples (2021). *About us*. <https://smartcouples.ifas.ufl.edu/about-us/>
- Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family*, 54(3), 595–608. <https://doi.org/10.2307/353245>
- Stanley, S. M., Rhoades, G. K., & Whitton, S. W. (2010). Commitment: Functions, formation, and the securing of romantic attachment. *Journal of Family Theory & Review*, 2(4), 243–257. <https://doi.org/10.1111/j.1756-2589.2010.00060.x>
- Weigel, D. J., Brown, C., & O’Riordan, C. K. (2011). Everyday expressions of commitment and relational uncertainty as predictors of relationship quality and stability over time. *Communication Reports*, 24(1), 38–50. <https://doi.org/10.1080/08934215.2010.511400>
- Whitton, S. W., & Whisman, M. A. (2010). Relationship satisfaction instability and depression. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 24(6), 791–794. <https://doi.org/10.1037/a0021734>