

Effects of Romantic Kissing on Love and Marital Satisfaction

DECEMBER 12, 2016

By Terry L. MacDonald, NU Student

Excerpted from a dissertation to fulfill the requirements for a

Doctor of Psychology in Counseling Psychology (Psy.D.)

at

Northwest University, 2016

Sarah B. Dravidah, Ph.D., Northwest University, Dissertation Chair

K. Kim Lampron, Ph.D., Northwest University, Committee Member

Kristie Mauldin, Ph.D., Northwest University, Committee Member

The present study examined the effects of increased romantic kissing on love and marital satisfaction. Participants in the experimental condition were asked to increase the frequency with which they kissed their spouse over a six-week period. Levels of marital satisfaction and feelings of love were measured pre- and post-test through the administration of the Relationship Assessment Scale and the Triangular Love Scale. The results of this study suggested that the participants who increased their frequency of kissing also reported an increase in sexual activity and verbal expressions of love. However, the effects of increased romantic kissing on marital satisfaction and feelings of love remained limited if not absent. This appeared to be the case regardless of participant's gender, age, or length of marriage.

Romantic kissing possesses rich and distinctive qualities which are considered substantially beneficial and of significant consequence to many people. As a result of globalization, lip-to-lip kissing, which was once considered a predominantly Western practice, is now estimated to be practiced by over six billion people worldwide as a social and romantic custom (Kirshenbaum, 2011). This act of affection also appears to be unique in comparison to other intimate behaviors. Researchers have demonstrated that while increased romantic kissing is positively related to relationship satisfaction, other physiologically arousing acts, such as intercourse, are not for both men and women (Heish, Haugen, Widman, Darling & Grello, 2005; Wlodarski & Dunbar, 2013). Ironically, romantic kissing is viewed by many as a more intimate behavior than sexual intercourse (Kirshenbaum, 2011; Wlodarski & Dunbar, 2013). Kissing has also been found to be one of the most highly preferred acts of romantic affection within Western culture (Gulledge, Gulledge & Stohman, 2003) and has been assigned the highest intensity rating by romantic partners (Floyd, 1997). For the purpose of this dissertation, the definition of romantic kissing is simultaneous, tactile contact with the lips of both partners (Floyd, 2006).

The human lips correspond to a disproportionate amount of neural space, as compared to the rest of the human anatomy (Kirshenbaum, 2011). Thus, the lips send significantly more sensory messages to the brain and are far more sensitive to stimuli than most other parts of the body. Sensations from a kiss are sent to the limbic system, which is associated with the human experience of lust, passion, and love. During a romantic kiss, the human body is stimulated to produce neurotransmitters and hormones including oxytocin, dopamine, epinephrine and serotonin. These substances instruct the brain to produce a series of responses, which then motivate behavior. For instance, oxytocin is considered to be largely responsible for feelings of attachment and dopamine can cause feelings of euphoria. It is important to note, however, that as a person becomes increasingly accustomed to his or her romantic partner, the levels of these neurotransmitters and hormones decrease over time (Kirshenbaum, 2011).

While researchers have successfully demonstrated a relationship between physical affection and relationship satisfaction, studies became remarkably sparse when physical affection is narrowed down to the singular construct of romantic kissing. In addition, research is lacking in the area of physical affection in relation to feelings of love. With the exception of one experiment conducted by Floyd et al. (2009), which will be discussed later, the entire body of research has been correlational in nature. Thus, questions still remain as to which mechanisms cause which effects. For instance, does an increase in kissing cause an increase in feelings of love and marital satisfaction? Or does marital satisfaction and feelings of love cause an increase in kissing? Or perhaps this relationship is circular, wherein each increases the other. While it is widely accepted that love and marital satisfaction coincide, for research purposes it is necessary to address these two components separately.

With regard to the element of love, Robert Sternberg (1986) posited a Triangular Theory of Love in which each of the three vertices of a triangle is a component of love. The three components consist of intimacy (the top vertex), passion (the left-hand vertex), and commitment (the right-hand vertex). In relation to one another, Sternberg theorized that the amount of love depends on the strength of these three elements independent of one another; whereas, the kind of love depends on the intensity of each. While it is relative to one another, in other words, these three components interact with one another in a variety of ways, and each combination produces a different type of loving experience.

The definition of each of these components is critical to both the theory as well as the measurement of love and will be utilized for the purposes of this study. Sternberg (1986) described intimacy as a person's subjective feelings of closeness, bondedness, and connectedness. This element is considered to be the emotional piece that creates the experience of warmth in a relationship. Passion is portrayed to be the aspect in the relationship that fuels romance, sexual attraction, and desire. This is the physiological component that motivates the arousal and drive in a relationship. Commitment is characterized as one's decision to love another person and maintain that love. This factor serves as the cognitive piece within the relationship.

Sternberg (1986) also postulated that each of the levels of intimacy, passion, and commitment can independently increase or decrease throughout the development of a relationship. For instance, he theorized that while most dating relationships begin with a high level of passion without intimacy and commitment, if the relationship remains and develops, it moves into romantic love which intimacy is added, but not commitment. Later, if the relationship continues to last and mature, then companionate love occurs, in which commitment becomes present and increases over time as well as intimacy, but passion begins to decrease.

For the purpose of this study, the definition of marital satisfaction is a person's general satisfaction with his or her marriage (Hendrick, Dicke & Hendrick, 1998). The critical variables that play a role in marital satisfaction are as follows: how well a person perceives his or her needs to be met by his or her partner; how well the relationship is perceived as compared to other relationships; a lack of regrets about the relationship; how well a person's expectations have been met; love for one's partner; and, finally, a lack of problems in the relationship. Research has clearly demonstrated how critical marital satisfaction is to not only the health of the marriage, but to people's overall happiness and health in general.

Marital satisfaction has been said to be the most studied dependent variable in the entirety of marriage and family relationships (Adams, 1988; Spanier, 1976). In one study, researchers analyzed the effect that the quality of marriage had on America's overall happiness and satisfaction with life (Glenn & Weaver, 1981). They discovered that, compared to all other dimensions of well-being such as finances, family life, employment, and friendships, marital happiness was the most significant. More precisely, researchers determined that adults' happiness depended more upon marital satisfaction than any other factor. On a more global scale, Stock and Eshleman (1998) studied 17 nations in order to analyze the correlation between marital status and happiness. These researchers found that being married was over three times more associated with the variance of happiness than was cohabitation (i.e., living together without being married). In addition, they found that men and women experienced an equal increase in happiness due to marriage.

In another recent study, researchers executed a meta-analysis that reviewed 126 published empirical articles spanning 50 years (Rables, Slatker, Trombello & McGinn, 2014). The articles reviewed in this meta-analysis discussed the associations between the quality of the marital relationship and physical health in over 72,000 individuals. These researchers found that marital quality is typically operationally defined as self-reported satisfaction with the relationship and one's partner. The major overall finding was a strong correlation between low marital quality and poor health. Along these same lines, a National Institute of Mental Health report on prevention indicated that marital distress and conflict are significant risk factors for several types of dysfunction and psychopathology, especially depression in adults (Cieie, Watt, West, Hawkins & Al, 1993).

Researchers have investigated the relationship between satisfaction and love and have consistently found a positive correlation (Graham & Christiansen, 2009; Hill, 2009; Lemieux & Hale, 1999, 2000). Satisfaction and love have proven to be so strongly associated that researchers actively utilize satisfaction scores in order to prove concurrent validity of love scales (Masuda, 2003). In fact, satisfaction scores are considered one of the most crucial elements in determining a romantic relationship's stability and viability (Sternberg, 1997). On a large scale, Graham (2011) conducted a meta-analysis of 103 studies in which researchers had examined measurements of love. The overall findings was that love was positively associated with relationship satisfaction.

Affectionate communication, in general, is considered to be a critical component for the development and maintenance of personal relationships (Floyd & Morman, 1998). Several researchers have studied the broader spectrum of affectionate behaviors, both verbal and nonverbal, and have found significant results. Physiologically appealing, it has been demonstrated that giving and receiving affection can regulate hormonal stress (Floyd & Rikugatake, 2008); have an overall stress-buffering effect (Floyd, 2001; Paul & Heise, 2010); lower depressive symptomatology (Holt-Lundstad, Birmingham & Light, 2011); and decrease their responses (Coan, Schaefer & Davidson, 2006). Additionally, relationship experts, researchers have demonstrated that a higher level of affectionate behavior between newlyweds predicts a lower rate of divorce 13 years later (Huston, Coughline, Houts, Smith & George, 2001).

Researchers have also demonstrated that there are differing benefits between receiving and expressing affection. With regard to expressing affection, Floyd (2002) discovered that highly affectionate people are advantaged psychologically, emotionally, and relationally as compared to those who exhibit low levels of affection. In three additional studies, Floyd et al. (2005) determined that people who express affection experience increased self-esteem and happiness, decreased susceptibility, decreased fear of intimacy, and higher relationship satisfaction. With regard to attachment, Guerrero and Bachman (2006) found that secure individuals reported using more romantic affection than avoidant individuals.

Researchers have also found that individuals who receive more intimate behaviors from their partner report more relationship satisfaction (Burke & Young, 2012). Huston and Chorut (1994) conducted another longitudinal study of newlyweds over a period of two years. These researchers discovered that the amount of affection the husband expressed buffered the impact of his negativity on his wife's satisfaction. In other words, when the husband exhibited higher levels of affection, his wife demonstrated a decrease in the affection associated with her husband's negativity. This result was not found in the husbands, however. Bell, Daly and Gonzalez (1987) also found that physical affection expressed by husbands was one predictive factor of wives' marital satisfaction.

While there is robust research demonstrating the positive effects of affection in general, physical affection research is sparser. Researchers have confirmed that nonverbal communication is the principal and most powerful means for relational communication (Andersen, 1998). More specifically, about all other forms of communication, touch most quickly and directly signals and escalates intimacy (Boyter, 1986), conveys love (Hartenstein, Keltner, App, Bullen & Jaskolka, 2006), supports intimate emotions, and is the preferred method to display the communication of love (App, McIntosh, Reed & Hertenstein, 2011). Touch has also been shown to increase self-disclosure (Cooper & Bowles, 1992) and impart more receptivity, trust, and affection (Burgoon, 1991). Givertz (1990) argued that touch is so profound within relationships because it diminishes the distance that divides and separates people.

Several researchers have demonstrated that physical affection has significant physiological benefits. It has been shown that physical affection supports modulation of cardiovascular arousal (Diamond, 2000; Fishman, Turkheimer & DeGood, 1995); decreases blood pressure and pain (Fishman, Turkheimer & DeGood, 1995); and decreases cortisol levels, as well as increases serotonin levels (Field, 2002). Physical affection has also been shown to have significant emotional benefits. It has been demonstrated to decrease anxiety (Field, 2002; Olson & Sneed, 1995); decrease stress (Fishman, Turkheimer & DeGood, 1995); decrease aggression (Field, 1999, 2002); Skuntick, Lech & Katz, 1998); and reduce depression (Field, 2002). In addition, physical affection has been shown to improve mood (Field, 2002); increase positive emotional responsiveness (Olsson et al., 2002); enhance empathy (Adams, Jones, Schorndorff & Jensen, 1982; Field, 2002); encourage respect (Gaines, 1996); and foster self-esteem (Barb & Thomas, 1986). Finally, physical affection has been determined to augment attachment (London, 1989; Carter, 1998).

Regarding physical affection within the context of romantic relationships, it has been noted that physical affection is significantly correlated with relationship and partner satisfaction (Gulledge, Gulledge & Stohman, 2003; Hill, 2004). Furthermore, a strong relationship has been discovered between romantic physical affection's perceived intimacy level and its importance to relationship satisfaction (Hill, 2004). In addition, researchers have found that higher levels of conflict resolution are significantly and positively correlated with higher levels of physical affection (Gulledge, Gulledge & Stohman, 2003).

It has also been demonstrated that the expression of physical affection between romantic partners has a significant impact on the quality of psychological intimacy within the loving relationship (Mackey, Diemer & O'Brien, 2000). Further, it has been shown that romantic physical affection helps achieve a high level of relational satisfaction (Schultz & Schultz, 1987) and causes partners to feel more understood by one another (Fisher, 1998). Researchers have also discovered that the only significant predictor of relationship satisfaction is a decrease in affectionate communication (Sweik, Dooley, Weiner, Williamson & Walters, 2005).

Not all physical affection research findings have been consistent, however. Danton, Stafford & Canary (1994) conducted a study on maintenance strategies among married couples and discovered that physical affection did not predict feelings of love. In addition, Furumomi-Carter (2004) analyzed affectionate communication and satisfaction among both married and dating couples and found that nonverbal affectionate communication was not a significant predictor of relationship satisfaction.

When physical affection is narrowed merely to romantic kissing, only a handful of researchers have analyzed this variable, and the majority of those investigators have not utilized it as a singular focus. For instance, Floyd (1997) asked subjects to rate the intensity of a list of affectionate behaviors. Subjects gave "kissing on the lips" the highest intensity rating for nonverbal behaviors with an average intensity rating of 4.64 out of a possible 5.00. In another study, Floyd analyzed romantic physical affection types, subjects rated kissing on the lips as one of the most highly-favored forms of physical affection, along with cuddling/holding (Gulledge, Gulledge & Stohman, 2003). Weisker, Haugen, Widman, Darling and Grello (2005) conducted a study in which they examined affectionate behaviors as a predictor of the quality of their romantic relationships. These researchers discovered a significant positive correlation between the frequency of kissing and relationship satisfaction with no significant differences between genders.

Evolutionary researchers have also studied romantic kissing in order to examine its use and meaning, as well as to look for gender differences. These researchers have demonstrated that men are more likely to kiss before intercourse for the purpose of initiating sex; whereas women are more likely to kiss after sex in order to pair-bond and maintain the relationship (Harrison, 2009; Hughes, Harrison & Gallup, 2007; Hughes & Krueger, 2011). It was also discovered that both genders use kissing as a bonding mechanism and place more importance on this act in long-term relationships as compared to short-term relationships (Hughes, Harrison & Gallup, 2007; Hughes & Krueger, 2011).

Along these same lines, Wlodarski and Dunbar (2013) hypothesized that the potential functions of romantic kissing were mediation of attachment feelings and facilitation of arousal for sexual relations. It was demonstrated that kissing frequency was related to relationship satisfaction and that kissing was perceived as more significant in long-term relationships. However, in contrast to previous studies, it was not supported that another primary function of kissing was for the purpose of increasing levels of sexual arousal. Wlodarski and Dunbar (2013) conducted another kissing study in which they analyzed menstrual cycle effects on attitudes toward romantic kissing. In this study, they found that women in the initial stages of a relationship and of high risk of conception felt that kissing was more important than women in the low-conception-risk phase of their cycle. This finding supports previous research that romantic kissing is utilized to assess potential mating partners.

With regard to utilizing an experimental methodology in order to analyze the effects of romantic kissing, only one study has been published. In 2009, Floyd et al. investigated the influences of increased romantic kissing on blood lipids, stress, and relationship satisfaction. Participants included 52 healthy adults, all of whom were in marital or cohabitating relationships. It was demonstrated that the participants who kissed more experienced improvements in relationship satisfaction, total serum cholesterol, and perceived stress. Although Floyd et al. provided some experimental evidence, did romantic kissing increase relationship satisfaction, their ultimate purpose was to examine the stress-alleviating affects of affection rather than cause-and-effect relationships between kissing and relationship status.

Despite the fact that there has been a striking lack of empirical research on physical affection and relationship satisfaction, and even significantly less so on kissing and relationship satisfaction, the findings that have been demonstrated generally concur with regard to the linear relationship between these variables. With the exception of a couple of studies (Danton, Stafford & Canary, 1994; Furumomi-Carter, 2004), there has been an overall positive relationship demonstrated between physical affection and relationship satisfaction (Fishery, 1998; Gulledge, Gulledge & Stohman, 2003; Hill, 2004; Mackey, Diemer & O'Brien, 2000; Schultz & Schultz, 1987; Sweik, Dooley, Weiner, Williamson & Walters, 2005; Talbot & Stokes, 1983; Walsh Haugen, Widman, Darling & Grello, 2005). With regard to research that has analyzed specifically kissing and relationship satisfaction, a positive relationship has also been demonstrated (Floyd, et al., 2009; Wlodarski & Dunbar, 2013). In addition, it has been shown that there is a significant relationship between satisfaction and love (Acevedo & Aon, 2000; Dandaneau & Johnson, 1994; Graham & Christiansen, 2009; Graham, 2011; Grewl & Malherbe, 2001; Hill, 2009; Lemieux & Hale, 1999, 2000; Masuda, 2003; Shaefer & Olson, 1981; Sternberg, 1997; Talbot & Stokes, 1983; Traugott, Eckels & Havelid, 1981). Thus, in light of the empirical research, it was predicted for this study that an increase in romantic kissing would increase participants' level of marital satisfaction, feelings of love overall as well as increase specific feelings of intimacy, commitment, and passion.

METHOD

Participants

Eighty-two married people participated in the present study. Participants included only one spouse from each marriage in order to eliminate risk of interdependent responses. Fifteen participants were male and 67 were female. Average subject age was 37 years old, and average length of marriage was 11 years. All participants were over the age of 18. Participants were recruited through Facebook invitations. A total of 2,000 people were invited to participate in the study, and 90 individuals participated. There was a gradual attrition over the course of the six-week study, with 82 participants remaining to completion.

Procedure

This study was a single-blind, true experiment with between-subjects groups. The individuals in the experimental group were instructed to kiss their spouse more frequently and for longer durations over a period of six weeks. The control group was not given these instructions. Levels of marital satisfaction and feelings of love were measured pre- and post-test. The independent variables were the frequency of kissing and time (i.e., duration of six weeks). The dependent variables were levels of marital satisfaction; feelings of love (i.e., measured by the subscales of intimacy, passion, and commitment); age; length of marriage; and gender. Participants were randomly assigned to the control or experimental (i.e., kissing) group using stratified random assignment via a randomizer software program. This also ensured an equal sex distribution across conditions.

Based on the methodology of Floyd and colleagues (2009), participants in both groups were emailed on a preannounced Monday, which was the official start date of the experiment. This initial email contained the consent form, the demographic survey, the Relationship Assessment Scale (Hendrick, 1988), and the Triangular Love Scale (Zeng, 1993). Every Monday thereafter, all participants received the weekly check-in email with a reminder to the experimental group to continue kissing more frequently and for longer durations than normal. The final email (at the end of the six-week trial) asked the participants to fill out the Relationship Assessment Scale and the Triangular Love Scale again.

Participants assigned to the experimental group were instructed in the first email to romantically kiss their partner more frequently and for longer durations, to the point that there was a noticeable difference in their weeks. The request made to the experimental group to kiss one's spouse more frequently and for longer durations did not offer a further operational definition and simply allowed the subject to interpret the instructions within the context of his/her own spousal relationship. It was thought that putting further parameters around the intimate act of romantic kissing would risk causing the partners' kissing to become too mechanical, which might, in turn, undermine the personalized relational implications that were critical to this study (i.e. feelings of love and satisfaction). For statistical purposes, baseline measures of frequency of kissing were taken pre-test and then reported in each weekly check-in for the duration of the six weeks.

RESULTS

Manipulation check

First, an analysis was run to determine if the manipulation (increased kissing) was administered effectively and the experimental group did in fact kiss more frequently than usual as compared to the control group. The frequency of kissing was computed by taking an average of reported measures from weeks one through six. A 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVA was conducted. There was a significant main effect of Time Point $F(1,80) = 6.176, p = .015$, such that those at Time Point 2 ($M = 6.64, SD = 6.41$), showed overall more kissing behavior than those at Time Point 1 ($M = 5.32, SD = 5.61$), $d = -.22$. There was no main effect of Manipulation, $F(1,80) = .833, p = .364$. Analyses also revealed the presence of a significant interaction, $F(1,80) = 4.033, p = .048$. More specifically, participants in the experimental condition experienced significantly more kissing behaviors during the course of the study ($M = 7.76, SD = 8.87$) than at the baseline of the study ($M = 5.32, SD = 6.12$), $p = .002, d = -.35$. However, the control condition did not show a similar increase in kissing behavior between the baseline ($M = 5.31, SD = 5.07$), and end of the study ($M = 5.57, SD = 4.46$), $p = .734$. Thus, the manipulation was successful in increasing frequency of kissing in the experimental condition without producing any placebo effects in the control group.

Marital satisfaction and feelings of love

Next, a series of 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVAs were conducted on the scores from the Relationship Assessment Scale (Hendrick, 1988), the Triangular Love Scale (Zeng, 1993), and the subscales of intimacy, passion, and commitment. Additional factors measured throughout the six weeks were changes in conflict, communication, time spent together, verbal expressions of affection, and sexual activity. For these additional, secondary measures, the average of each was computed across the six-weeks and compared between experimental and control conditions. For the secondary measures then, an independent samples t-test was used to assess the effects of the kissing manipulation (relative to the control condition) across time. Note that in the next to follow, effect sizes for significant findings are calculated with Cohen's d .

Relationship Assessment Scale. A 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVA on the Relationship Assessment Scale indicated no significant main effect of Time $F(1,80) = 2.309, p = .133$, no significant main effect of Manipulation $F(1,80) = 1.007, p = .209$, and no significant Manipulation x Time Interaction, $F(1,80) = 1.384, p = .243$.

Triangular Love Scale (overall). A 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVA on the Triangular Love Scale (overall) indicated a significant main effect of Time $F(1,80) = 5.419, p = .022$, such that participants reported significantly more overall feelings of passion at Time 2 ($M = 108.15, SD = 21.17$) than Time 1 ($M = 102.99, SD = 18.00$). M difference = 5.163, $d = .51$. However, there was no significant main effect of Manipulation $F(1,80) = .231, p = .632$, and no significant Manipulation x Time interaction, $F(1,80) = 1.852, p = .177$, suggesting the experimental group did not experience more passion relative to the control group across time.

Triangular Love Scale (passion subscale). A 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVA on the Triangular Love Scale (passion subscale) indicated a significant main effect of Time $F(1,80) = 10.322, p = .002$, such that participants reported significantly more overall feelings of passion at Time 2 ($M = 108.15, SD = 21.17$) than Time 1 ($M = 102.99, SD = 18.00$). M difference = 5.163, $d = .51$. However, there was no significant main effect of Manipulation $F(1,80) = .231, p = .632$, and no significant Manipulation x Time interaction, $F(1,80) = 1.852, p = .177$, suggesting the experimental group did not experience more passion relative to the control group across time.

Triangular Love Scale (commitment subscale). A 2 (Control vs. Experimental group) x 2 (Time 1 vs. Time 2) mixed-model ANOVA on the Triangular Love Scale (commitment subscale) indicated no significant main effect of Time $F(1,80) = 1.751, p = .189$, no significant main effect of Manipulation $F(1,80) = 1.535, p = .219$, and no significant Manipulation x Time interaction, $F(1,80) = 0.151, p = .698$.

Thus, while some of the subscales produced significant main effects across time or between the experimental and control groups, there was no interaction effects that would indicate the experimental group differed significantly more across time relative to the control group. In addition, independent samples t-tests were run to determine if there were significant differences in any of these scores between males and females. No significant differences were found, $p > .35$.

This was not the case, however, with the behavioral measures. Specifically, a secondary analysis provided evidence of the manipulation's effects through an increase of sexual activity and verbal expressions of love. While there were no true pre-study measures for these behavioral variables, participants were asked weekly across the six-week study (beginning the 2nd week) about their conflict, time spent together, difficulty communicating, sexual activity, and verbal expressions of love. Averages were taken across the six-week intervals and results were assessed simply by between-subject t-tests between control and experimental groups. Results indicated a significant increase in sexual activity ($M = 2.657, p = .01$), such that those in the experimental group demonstrated more sexual activity ($M = 3.94, SD = 1.14$) than those in the control group ($M = 3.10, SD = 1.38$), $d = .59$. A similar result was observed for verbal expressions of love ($M = 3.027, p = .003$, such that those in the experimental group ($M = 4.40, SD = 1.41$), demonstrated more than those in the control group ($M = 3.94, SD = 1.14$), $d = .70$). All other secondary measures were non-significant, $p > .09$.

Moderator analysis

Regression analyses were run to ascertain if gender, age, or length of marriage moderated the relationships between any of the variables. Note that this analysis required regression because the moderator variables were continuous, rather than categorical. The moderator analyses did not yield any significant effects above and beyond the main item variables.

DISCUSSION

The purpose of this study was to examine the effects of increased romantic kissing on love and marital satisfaction. The hypothesis that an increase in romantic kissing over six weeks would increase one's level of marital satisfaction was not supported by the results of this study. Rather, it was demonstrated that although there was an increase in frequency of kissing, as well as an increase in other romantic behaviors such as sexual activity and verbal expressions of love, there was not an increase in one's perceived level of marital satisfaction. The hypothesis that an increase in romantic kissing over six weeks would increase feelings of love overall toward one's spouse was also not supported by the results of this study. It was demonstrated that, despite the experimental condition's increase in kissing and other romantic behaviors (i.e. sexual activity and verbal expressions of love), there was not an increase in feelings of love overall towards one's spouse.

As mentioned earlier, the design of this study was very similar to that of Floyd et al.'s (2009) study. However, unlike the current study's results, Floyd et al.'s findings were that, relative to the control group, the experimental group did in fact experience statistically significant improvements in relationship satisfaction (as well as total serum cholesterol and perceived stress). The difference in the findings between Floyd et al.'s experiment and the current experiment could be due to several dissimilarities in the samples that were used.

First, Floyd et al.'s participants were recruited from only one university's staff as well as its undergraduate and graduate population. The present study's participants were recruited via social media and, therefore, represented a significantly larger geographical base. Second, Floyd et al.'s sample consisted of 52 participants while the current study's sample was comprised of 82. Third, Floyd et al.'s sample was comprised of both married as well as cohabitating couples, whereas the present study's sample included only married individuals. As discussed in the literature review, it has been demonstrated that being married was over three times more associated with the variance of happiness than was cohabitation (Stock & Eshleman, 1998). In light of this, perhaps the current study's sample had a higher level of relationship satisfaction pre-test than Floyd et al.'s. The Relationship Assessment Scale pre-test score was $M = 4.3$ out of a possible 5.0; scores over 4.0 are indicative of non-distressed relationships (Hendrick & Hendrick, 1998). Although these scores could be indicative of a ceiling effect, the difference between the mean and the top of the scale makes that possibility unlikely. If note that pre-test scores were not compared to Floyd et al.'s measures). Finally, there was no mention in Floyd et al.'s study of using only one individual from each relationship in order to avoid interdependent responses whereas this was a prerequisite in the present study.

One hypothesis as to why the experimental group's romantic behaviors increased (i.e. sexual activity and verbal expressions of love), but marital satisfaction and feelings of love did not is perhaps because a person's perceptions and attitudes with regard to their spouse may be significantly more ingrained than first assumed. In other words, the feelings of love and satisfaction one has for his/her spouse may be so deeply embedded over a long period of time that it would require significantly more behavior change to alter these emotions and impressions. This hypothesis would be supported by the fact that those who kissed more experienced behavioral change, but without an alteration of perceptions and feelings toward their spouse.

It has also been demonstrated in research that highly affectionate people are advantaged psychologically, relationally, and emotionally as compared to those who exhibit low levels of affection (Floyd, 2002). Further, people who express affection experience increased self-esteem and happiness, decreased susceptibility, decreased fear of intimacy, and higher relationship satisfaction (Floyd, 2005). However, then, the people who chose to participate in the present study were more likely to have already possessed the above-mentioned characteristics and, therefore, entered the study in a positive and relationally satisfied state.

The present study's results are also in line with findings in the evolutionary-psychology literature. Specifically, it has been shown that kissing was noted by both genders as important before intercourse with a long-term partner (Hughes & Krueger, 2011). Additionally, it has been demonstrated that kissing plays a significant role in the adaptive mating ritual and that both genders use kissing as a bonding mechanism (Hughes, Harrison & Gallup, 2007). The results from the current study supported these findings in that those who were instructed to kiss their spouse more frequently and for longer periods of time also reported an increase in sexual activity and verbal expression of love. Thus, it appears that behavioral changes can, in fact, lead to other behavioral changes; however, these changes seem to be limited and do not necessarily lead to alterations in one's feelings or perceptions of his/her spouse.

Finally, another point discussed in the literature review was the research which demonstrated that receiving affection better predicted relationship satisfaction, whereas expressing affection better predicted commitment (Lund, 1985; Hosen & Booth-Barthelme, 2010). Similarly, it has also been shown that those who receive more intimate behaviors from their partners report more relationship satisfaction (Burke & Young, 2012). Relative to this research, it could be argued that the participants who were instructed to initiate an increase in kissing with their spouse would have reported increased levels on the commitment subscale post-test. This was not the case, however. There were no increased levels of commitment reported on the measured commitment subscale of love in the experimental group. Also based on research that the question was raised as to whether the spouse who was receiving the kisses (who was not considered a participant and did not report in this study) would have possibly experienced an increase in relational satisfaction as the recipient of the increased kissing behaviors. Although allowing both spouses to respond to the questionnaires would have increased the likelihood of interdependent responses, perhaps it would have been more informative to have had both spouses officially participate and report.

One of the limitations of the current study was that it utilized a relatively small sample ($N=82$). This could be remedied by recruiting a larger sample that represented a larger range of relationship types (i.e. cohabitating, dating, etc.). Another limitation was that all participants were initially recruited via Facebook and then directed to email correspondence with the researcher from that point forward throughout the remainder of the study. Thus, there was no personal interaction of any point in the process. There also may have been some limitations with regard to volunteer bias. Out of 2,000 invitations to participate in the study sent via Facebook, only 82 participants completed the study. This poses the question: out of all the people invited and the strong interest shown, why did such a small number of people participate? It is possible that the married couples who were not relationally satisfied or as affectionate were not comfortable participating in the study.

One possibility for future research would be to use a sample of participants who reported a level of marital distress at pre-test rather than participants who scored a relationally satisfied prior to the study. This, however, would create some ethical issues that need to be addressed. Perhaps marital counseling could be offered as an option for follow-up after the study. Another prospect for future research would be to measure other forms of affection rather than the singular construct of romantic kissing. An additional recommendation would be to utilize a mixed methods approach in which some qualitative methodologies could be employed as well. This would allow the participants to be interviewed in order to ensure that they could fully explain their experiences rather than simply be limited to questionnaires. Finally, because results showed an increase in the experimental group's romantic behaviors (sexual activity and verbal expressions of love), perhaps an experiment lasting longer than six weeks would have had more influence on altering the participants' perceptions and attitudes with regard to their partner and relationship.

Ultimately, this study's findings could begin to challenge what is currently considered a therapeutic technique by some counseling professionals (Bradbury, Fitchner & Beach, 2000; Breznaynski & Whitman, 2004; Gulledge, Huter & Salloum, 2007; Johnson, 2008). Specifically, the results of this study should serve as a caution when advising couples to simply express more physical affection in order to increase marital satisfaction and feelings of love. It seems that this instruction alone, without other interventions, may not be effective. The variables of relationship satisfaction and feelings of love are far more complex and require more consideration than simply one affectionate act. Finally, this study's results also serve as a compelling caution with regard to the importance of not assuming causality. Despite a compendium of correlational research which demonstrates a strongly positive linear correlation between physical affection and relational satisfaction, this study failed to find evidence that an increase in romantic kissing increased feelings of love and relationship satisfaction.

REFERENCES

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