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Tiffany Ann Migdat
Brigham Young University

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The Effect of Marital Therapy on Physical Affection

Tiffany Ann Migdat

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

Richard Miller, Chair
Julianne Holt-Lunstad
Jonathan Sandberg

School of Family Life
Brigham Young University

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ABSTRACT

The Effect of Marital Therapy on Physical Affection

Tiffany Ann Migdat
School of Family Life, BYU
Master of Science

Research indicates that marital satisfaction is associated with levels of physical affection between partners. This is important because there is evidence of physical and mental health benefits of physical affection. Although past research has shown that marital therapy increases levels of marital and sexual satisfaction, the association between marital therapy and physical affection has not been explored. This study used a treatment group and a control group of 108 married couples to assess the relationship between marital therapy and physical affection over a course of 12 weeks. Using structural equation modeling and an actor partner analytic model, results indicated that marital therapy was significantly associated with increases in physical affection for husbands, but not wives.

Keywords: physical affection, marital therapy

TABLE OF CONTENTS

TITLE	i
ABSTRACT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
Introduction	1
Literature Review	2
Physical Affection	2
Gender Differences.....	4
Sexual Intimacy	5
Marital Therapy.....	6
Current Study	7
Methods	7
Participants	7
Procedure.....	9
Measures	9
Control Variables.....	11
Analysis.....	11
Results	12
Preliminary Analysis	12
Path Model Results.....	13

Discussion 14

 Clinical Implications 15

 Limitations..... 16

References 18

Appendix 26

LIST OF TABLES

Table 1	26
Table 2	27

LIST OF FIGURES

Figure 1 28

Introduction

Although receiving much less attention from researchers than sexual intimacy, research has shown physical and mental health benefits of physical affection (L'Abate, 2007; Light, Grewen, & Amico, 2005), which can be classified as non-sexual physical touch. For example, Grewen and colleagues investigated the relationship between brief warm physical contact among cohabitating couples and blood pressure (BP) reactivity to stress. Those who received partner contact in the form of handholding prior to a stressful task demonstrated lower systolic BP, diastolic BP, and heart rate increases compared with the no contact group (Grewen, Anderson, Girdler, & Light, 2003). Research also suggests that physical affection has important relationships benefits (Muise, Giang, & Impett, 2014). Physical affection is correlated with relationship and partner satisfaction, and higher levels of physical affection are associated with resolving conflict (Gulledge, Gulledge, & Stahmann, 2003).

Research has also found a link between sexual intimacy and marital satisfaction (Greeff & Malherbe, 2001; Sprecher & Cate, 2004; Hassebrauck & Fehr, 2002). For example, a higher frequency of sexual intimacy is associated with higher marital satisfaction (Sprecher, Christopher, Cate, Vangelisti, & Perlma, 2006; Sprecher, 2002; Lawrence & Byers, 1995). Research has also found that physical affection is predictive of relationship satisfaction (Hill, 2004; Gulledge et al., 2003; Heiman, Long, Smith, Fisher, Sand, & Rosen, 2011). Saavetra found both physical affection and sexual intimacy buffer the negative relationship between current relationship satisfaction and attachment avoidance (Saavetra, 2012).

There is a robust research literature on the relationship between marital therapy and relationship quality, generally showing that marital therapy improves relationship quality. (Johnson & Lebow, 2000; Shadish & Baldwin, 2003; Lebow & Chambers, 2012; Snyder &

Halford, 2012; Snyder, Castellani, & Whisman, 2006). In addition, there is evidence that marital therapy has a positive effect on the frequency and satisfaction of sexual intercourse (Macphee, Johnson, & Van Der Veer, 1995; Hurlbert, White, Powell, & Apt, 1993; Christensen, 1983; O'Leary & Arias, 1983). Although there is evidence that marital therapy is associated with higher levels of sexual frequency and satisfaction, no research has been done that examines the effect of marital therapy on physical affection. Consequently, the aim of this study is to examine the effect of marital therapy on physical affection using a pretest-posttest design.

Literature Review

Physical Affection

Physical affection in romantic relationships has largely been neglected in the literature as a stand-alone construct. Few studies focus primarily on physical affection in the context of romantic relationships (Gulledge et al., 2003). The definition of physical affection has been ambiguous in the literature, as researchers do not always agree on the parameters of the construct of physical affection. Many of the behaviors used to describe physical affection have also been used to describe other similar constructs such as “love behaviors”, “affection”, “touch” and “affectionate behavior” (Gaines, 1996; Lemieux, 1996; Mackey, Diemer, & O'Brien, 2000). In an attempt to facilitate understanding, Gulledge and colleagues operationally defined physical affection as any touch intended to arouse feelings of love in the giver and/or recipient (Gulledge et al., 2003; Gulledge, Stahmann, & Wilson, 2004).

Research points to many health benefits of physical affection. Holt-Lunstad and colleagues found the benefits of physical affection to include lowering stress. The authors conducted a study where participants were taught various physical affection techniques and

instructed to practice them. Results indicated that increasing warm touch among couples had a beneficial influence on multiple stress-sensitive systems. The authors noted increased oxytocin and decreased alpha amylase with intervention. Both of these measures are related to stress reduction (Holt-Lunstad, Birmingham, & Light, 2008).

Grewen and colleagues also found physical affection to have a positive impact on managing stress. The authors compared the BP and heart rate of participants who engaged in hand holding and hugging prior to a stressful task to those in a control group. Those in the intervention group experienced lower systolic BP, diastolic BP and heart rate increases. They concluded that, “Affectionate relationships with a supportive partner may contribute to lower reactivity to stressful life events and may partially mediate the benefit of marital support on better cardiovascular health” (Grewen et al., 2003). Additional benefits associated with physical affection include decreased blood pressure (Fishman, Turkheimer, & DeGood, 1995), decreased anxiety (Olson & Sneed, 1995), decreased aggression (Field, 1999 & 2002), reduction of pain (Fishman et al., 1995), and the release of the hormones oxytocin and vasopressin, which are associated with pair bond formation and healthy social interactions (Carter, 2003).

There is substantial evidence that physical affection is predictive of relationship satisfaction (Hill, 2004). Floyd and colleagues examined the impact of the frequency of kissing on relationship satisfaction. The experimental group was instructed to increase the frequency of kissing while the control group was given no such instruction. Couples in the experimental group increased in relationship satisfaction in comparison with the control group (Floyd et al., 2009; Heiman et al., 2011).

Physical affection is also an important part of sexual intimacy. In a recent study, Muise and colleagues looked at the effect that physical affection directly after sexual intercourse had on

couples' relationship and sexual satisfaction. They found both quality and duration of post sex physical affection was associated with higher relationship quality (Muisse et al., 2014).

Gender Differences

Gender differences in physical affection preference have been observed. Gullledge and colleagues identified seven different types of physical affection, including backrubs/massages, caressing/stroking, cuddling/holding, holding hands, hugging, kissing on the face, and kissing on the lips (Gullledge et al. 2003; Gullledge et al., 2004). They then looked at the preference for these seven different types of physical affection by gender, as well as which activities each gender felt were most intimate and expressive of love. While both men and women in committed relationships indicate a desire for physical affection and shared intimacy with their partner (Hughes & Kruger, 2011; Kruger & Hughes, 2010), men favored kissing on the lips and backrubs/massages more than women. Women favored cuddling/holding and holding hands. Men and women both found kissing on the lips to be the most intimate and expressive of love.

In addition to differences in physical affection preference between men and women, gender differences and similarities have been observed in relation to physical affection and relationship satisfaction. Heiman and colleagues surveyed couples in long-term relationships in five different countries inquiring about different physical affection activities. The frequency of cuddling and kissing was associated with overall relationship satisfaction for men (Heiman et al., 2011). Gullledge and colleagues surveyed college students in relationships and found the amount of physical affection, both given and received, was positively correlated with relationship satisfaction for both genders (Gullledge et al., 2003).

Sexual Intimacy

Intimacy in a relationship has been defined as feelings of closeness, as well as sharing emotional and physical experiences with a partner (Schafer & Olson, 1981; Marroquin & Nolen-Hoeksema, 2015; Reis, Clark, & Holmes, 2004). Most definitions of intimacy focus on the factors of behavioral interdependency, fulfillment of needs, and emotional attachment (Brehm, 2001). One of the specific intimacy needs focused on in the literature is sexual intimacy (Greeff & Malherbe, 2001). Birnie-Porter and Lydon (2013) studied the construct of sexual intimacy and found major attributes of sexual intimacy to include having orgasms, each partner being receptive to the other, longing for the other, having a consensual and natural relationship, and having seduction in one's relationship. They also found many of the central sexual intimacy attributes to be consistent with research on passionate love, which is characterized in the literature by powerful feelings of passion, attraction, desire, longing, and sexual arousal (Sprecher et al., 2006).

Sexuality plays an important role in contributing to happiness and satisfaction in romantic relationships (Dainton, Stafford, & Canary, 1994; Impett, Muise, & Peragine, 2014). The frequency of sexual intimacy is important to relationship satisfaction and sexual satisfaction, with higher frequency leading to greater satisfaction in both men and women (Laumann, 2000). Therefore, couples who engage in a higher frequency of sexual intimacy typically experience higher sexual and relationship satisfaction (Lawrance & Byers, 1995; Sprecher, 2002).

In addition to the frequency of sexual intimacy, there is also evidence that sexual satisfaction is predictive of relationship satisfaction. Sexual satisfaction is defined in the literature as the degree to which an individual is satisfied or happy with the sexual aspect of his or her relationship (Sprecher & Cate, 2004). For example, one study of 335 couples found that

sexual satisfaction was a significant predictor of relationship satisfaction (Yoo, Bartle-Haring, Day, & Gangamma, 2014). In addition to sexual intimacy, marital therapy has also been demonstrated to impact relationship satisfaction.

Marital Therapy

There is a robust literature showing that marital therapy improves couples' relationship quality (Johnson & Lebow, 2000; Shadish & Baldwin, 2003; Halford & Snyder, 2012; Lebow, Chambers, Christensen, & Johnson, 2012; Snyder & Halford, 2012; Snyder, Castellani, & Whisman, 2006). In addition to clinical trials, marital therapy has been shown to be effective in field settings (Klann, Hahlweg, Baucom, & Kroeger, 2011; Hahlweg & Klann, 1997). Hahlweg and Klann (1997) surveyed couples attending couple therapy in social agencies from the beginning of therapy to completion, and then six months following completion. The pre-post comparisons showed significant improvements in several self-report relationship-oriented measures. Klann and colleagues replicated this study and found similar results (Klann et al., 2011).

There is also evidence that improvement in sexual intimacy is a positive outcome of marital therapy. Research indicates that marital therapy is generally effective at improving the frequency and satisfaction of sexual intercourse (Zajecka et al., 2002; Hurlbert et al., 1993; Macphee et al., 1995; O'Leary & Arias, 1983). For example, Zajecka and colleagues (2002) assessed sexual functioning among couples prior to receiving couple therapy and post treatment. Significant improvement in sexual interest, satisfaction, and functioning was noted post treatment. Bennum and colleagues also assessed sexual satisfaction during the course of couple therapy. Couples received 10 weekly sessions of marital therapy. Sexual functioning was assessed with self-report measures prior to treatment and post treatment. Significant

improvement in the reported quality of sexual functioning, frequency of sexual intercourse, communication, and sexual satisfaction was documented post treatment (Bennun, Rust, & Golombok, 1985).

Current Study

Although the bulk of research on physical intimacy has focused on the frequency of sexual intercourse and sexual satisfaction, recent research has shown that physical affection is also an important component of physical intimacy. However, the effectiveness of marital therapy in increasing the frequency of physical affection has not been examined. With previous research demonstrating that marital therapy is effective in improving relationship quality, as well as sexual relationships, it seems likely that marital therapy will improve physical affection. Therefore, the aim of the current study is to examine the effect of marital therapy on physical affection. We hypothesize that couples will increase the frequency of physical affection significantly from pre- to post-treatment. Recognizing the relationship between marital quality and physical intimacy, we also hypothesize that improvement in marital quality during the course of therapy will mediate the effect of marital therapy treatment on the increase in physical affection.

Methods

Participants

Data for this study come from a larger study examining cardiovascular risk profiles associated with marital quality prior to and after a 12-week marital therapy intervention (see Troxel, Braithwaite, Sandberg, & Holt-Lunstad, 2016). The sample for the study consisted of 216 participants, 108 married couples. Participants were recruited at intake at a university clinic

in the western United States when they called for clinical services, and from the community using paid advertising and flyers. Of the 108 couples that participated in the larger study, 60 were actively seeking therapy and agreed to participate in the study, while the additional couples in the study consisted of nondistressed couples recruited from the community. On average, couples seeking treatment were married for 6.1 years and those in the control group were married for an average of 4.5 years. On average, couples seeking treatment had 1.84 children, and those in the control group had .81 children. Couples seeking treatment were 30.5 years of age on average, while the control group was 26.9 years of age on average. Eighty percent of those seeking treatment were Caucasian, while 87% of those in the control group were Caucasian. The 60 clinical couples included 15 couples who received Emotion-focused Therapy (EFT). EFT is a short term, structured approach to couple therapy that focuses on restructuring key emotional responses and attachment bonds (Johnson, 2004; Dalglish et al., 2015). The remaining couples in the marital therapy group received unspecified treatment according to their therapist's preference.

Because the larger intervention study examined a number of health markers, couples in the treatment group were excluded if either spouse was taking medication that would impact blood pressure or if either spouse had a chronic illness that influenced cardiovascular functioning. Exclusion criteria also included a wife who was pregnant, breast feeding, planning on becoming pregnant in the next three months, or had given birth within the last six months for those in the treatment group. Those who were interested in the study but did not meet with inclusion criteria were still offered therapeutic services. Couples were offered incentives for participating in the study; they were offered marital therapy at no cost, as well as monetary compensation.

Procedure

Couples were first pre-screened over the phone to ensure they met the inclusion criteria. Both the treatment and control groups came to the lab to complete assessments at the beginning of the study and 12 weeks later. Upon arrival at the lab, which was necessary in order for researchers to collect health markers that were associated with the larger study, participants were briefed concerning the overall nature of the study, after which they signed a consent form describing the risks and benefits of the study and their rights as research participants.

Participants were given a variety of questionnaires to fill out, including a measure of physical affection and marital distress. Participants in the treatment and control groups completed a series of questionnaires that assessed general demographics variables (i.e., age, ethnicity, income, years married, number of children in the home), physical health (i.e. health history, sleep), mental health (i.e. depressive symptoms, general stress), and psychosocial measures (i.e., marital adjustment, social support). Participants completed the psychosocial and lifestyle assessments using a computerized survey tool (i.e., Qualtrics). Participants were also weighed and measured to assess body mass index (BMI) and waist circumference. The identical procedures were repeated 12 weeks later, with the exception of BMI assessment, which was assessed at baseline only.

Measures

Physical affection. The Physical Affection Scale was used to measure physical affection. The Cronbach's Alpha at pretest was .89 for males and .90 for females. The Cronbach's Alpha at posttest was .90 for males and .86 for females. This measure is comprised of 6 items that assess how many times in the past week couples had participated in a variety of forms of physical touch with their spouse, including hugging, kissing, handholding, sitting close or lying down close

together, giving massages or engaging in other forms of warm touch, and having sexual intercourse. Participants could select the following options in response to each question: 1 = *Less than once this past week*, 2 = *About once this past week*, 3 = *Several times this past week*, 4 = *About once a day*, or 5 = *More than once a day*. Because the purpose of the study was to examine non-sexual physical affection, the question about the frequency of sexual intercourse was excluded from these analyses, leaving five items. The measure did not distinguish between giving and receiving physical affection.

Marital distress. The Dyadic Adjustment Scale (Spanier, 1976) was used to assess marital relationship quality. The 32-item DAS is a widely used measure to classify couples according to level of adjustment (well-adjusted, mild, moderate, and severely distressed).

An abbreviated 14-item version of the DAS, the Revised Dyadic Adjustment Scale (RDAS) (Busby, Crane, Larsen, & Christensen, 1995) was used to screen level of marital distress during the recruitment process. The RDAS has been shown to have adequate validity, and previous research has found Cronbach's Alpha of .90 (Busby et al.). To qualify for participation, volunteers needed to display some relationship distress ($RDAS \leq 53$). The first section of the measure asks individuals to indicate how often they agree or disagree with their spouse about religion, affection, decision-making, sex, conventionality and career decisions. Participants could select the following options in response to each question: 0 = *Always disagree*, 1 = *Almost always disagree*, 2 = *Frequently disagree*, 3 = *Occasionally agree*, 4 = *Almost always agree*, or 5 = *Always agree*. The second section of the measure asks individuals to indicate how often they engage with their spouse about discussing the status of the relationship, quarrel with their partner, individually regret the marriage, the frequency that partners "get on each other's nerves", and engage in outside interests together. Participants could select the following options

in response to each question: 0 = *Always disagree*, 1 = *Most of the time*, 2 = *More often than not*, 3 = *Occasionally*, 4 = *Rarely*, or 5 = *Never*. The second section of the measure asks individuals to indicate how often certain events occur, including have a stimulating exchange of ideas, work on a project together and calmly discuss something. Participants could select the following options in response to each question: 0 = *Never*, 1 = *Less than once a month*, 2 = *Once or twice a month*, 3 = *Once or twice a week*, 4 = *Once a day*, or 5 = *More often*.

Control variables. Control variables included spouses' level of education, number of years married, and number of children. (Explain why we chose to use these were chosen to control for. When you control for things you loose power. Did it mess things up statistically?)

Analysis

The analytic strategies used in this study are based on a similar study that looked at the effect of marital therapy on the quality of sleep (Troxel et al., 2016). As indicated in Figure 1, pre-test level of husbands' and wives' level of physical affection were included in the statistical model, as well as whether or not the couple was in the treatment or control group. Structural equation modeling was used to analyze the data with the statistical program Mplus (Muthén & Muthén, 1998-2012). Consistent with the analysis used by Troxel and colleagues, the actor-partner independence model was used to fully utilize the dyadic data (Kenny, Kashy, & Cook, 2006). The model included maximum likelihood estimation, which was used to account for missing data (Byrne, 2001).

To test for indirect or mediating effects, the bootstrapping method of mediation analysis was used; this has been shown to provide more statistical power and more accurate confidence intervals than other methods for testing for mediation (Pituch & Stapleton, 2008). Each latent variable and structural path was tested separately.

Results

Preliminary Analysis

The mean score for combined treatment and control groups for T1 physical affection for males was 3.85 ($SD = .97$), and 3.68 ($SD = 1.05$) for females. The mean score for combined treatment and control groups for T2 physical affection for males was 4.05 ($SD = .97$), and 3.95 ($SD = .96$) for females. The mean score for combined treatment and control groups for T1 marital satisfaction for males was 95.51 ($SD = 13.34$), and 93.66 ($SD = 15.90$) for females. The mean score for combined treatment and control groups for T2 marital satisfaction for males was 99.67 ($SD = 10.60$), and 100.79 ($SD = 12.19$) for females.

Table 1 about here

Pearson correlations were conducted to examine zero order correlations among the variables in the study. As indicated in Table 1, among the males there was a significant association between treatment and T2 physical affection ($r = -.416, p < .01$). It was also significant among the females ($r = -.405, p < .01$). Results also indicated that change in marital satisfaction was not associated with post-test physical affection for males ($r = .10, p > .05$), or females ($r = -.21, p > .05$).

Table 2 about here

Path Model Results

The goodness of fit analysis of the structural equation model indicated that the model fit the data well. The chi-square was 14.06, with 13 degrees of freedom. The Tucker Lewis Index (TLI) score was .99 and the Comparative Fit Index (CFI) score was .99. The Root Mean Square Error of Approximation (RMSEA) score was .03.

As expected, husbands who received treatment experienced more improvement in their report of physical affection ($\beta = -.17, p = .04$) compared to the control group. However, treatment was not a significant predictor of improvement in wives' change in physical affection ($\beta = -.12, p = .09$). (what is going on for these women because they improved but it was not sig). Treatment was significantly predictive of improvement in marital satisfaction for husbands ($\beta = .30, p = .00$); and wives ($\beta = .37, p = .00$). Change in marital satisfaction was predictive of improvement in physical affection among husbands ($\beta = .26, p = .00$), but not for wives ($\beta = .09, p = .17$). None of the control variables significantly predicting either husbands' or wives' change in physical affection.

Only two partner effects were significant. Change in males' marital satisfaction was significantly predictive of females' change in physical affection ($\beta = .14, p = .03$). Additionally, females' physical affection at time 1 was significantly predictive of males' physical affection at time 2 ($\beta = .28, p = .01$).

To test for mediation of change in marital satisfaction in the relationship between treatment and T2 physical affection, the significance of the indirect effect using bias-corrected bootstrap 95% confidence intervals with 2,000 bootstrap samples was tested. The standardized indirect effects indicated that the latent variable of change in marital satisfaction was a significant mediator in the relationship between treatment and T2 physical affection for males (β

= .08, $p = .04$). However, the indirect effect was not significant among the females ($\beta = .03, p = .25$). These results indicate that change in marital satisfaction post treatment partially mediates the relationship between treatment and T2 physical affection for males.

Discussion

This was the first study to examine the effect of marital therapy on physical affection. Results indicated that marital therapy was associated with increased physical affection at the post-test follow-up; however, contrary to our expectations, we found that this effect was only statistically significant for males. A significant association between treatment and physical affection satisfaction among males is consistent with prior research showing that marital therapy is associated with an increase in sexual frequency and sexual satisfaction therapy (Zajecka et al., 2002; Macphee et al., 1995). However, the lack of significant associations overall for the pathway from treatment to changes in physical affection for females is in contrast to expectations and previous research.

The mediation analysis was significant among the males, indicating that marital therapy increased physical affection of males indirectly by improving marital quality. Overall, the findings of this study provide evidence that marital therapy has a direct effect on improvement among males' perception of physical affection. In addition, marital therapy effects males' physical affection indirectly through improvement in marital satisfaction. Thus, change in marital satisfaction partially mediates the relationship between marital therapy treatment and improvement in males' perception of physical affection.

Findings that marital satisfaction was not a significant mediating variable between treatment and improvement in physical affection among females are probably due to the lack of significance between change in females' marital satisfaction and change in their physical

affection. At first glance, the lack of association between females' change in marital satisfaction and post-test physical affection is puzzling, given the significant correlation between these two constructs in previous research (Hill, 2004; Gullledge et al., 2003; Heiman et al., 2011).

Interestingly, the previous study using the same data and analytical strategy to examine the effect of marital therapy on change in quality of sleep found identical results (Troxel et al., 2016).

Males' change in marital satisfaction predicted an improvement in their quality of sleep, but the path among the females was not significant. Our findings are also consistent with the study done by Heiman and colleagues who found cuddling and kissing was associated with overall relationship satisfaction for men but not women (Heiman et al., 2011).

The solution to this puzzle in this study probably lies in the significant partner effect between males' change in marital satisfaction and female's change in physical affection. For some reason, change in females' physical affection was captured by males', rather than females', change in marital satisfaction. Future research needs to explore this issue in order to determine if these findings are a statistical artifact or if it is, indeed, males' change in marital satisfaction during the courses of marital therapy that predicts females' post-test physical affection.

Clinical Implications

Physical affection is an important and understudied part of the marital relationship. Research has shown that it has many emotional, physical and mental health benefits (L'Abate, 2007; Light et al., 2005). Research supports that increasing physical affection is associated with increases in marital satisfaction (Floyd et al., 2009; Heiman et al., 2011). Additionally, our findings show that marital therapy is associated with increases in marital satisfaction for both males and females and increases in physical affection for males. Furthermore, increases in

marital satisfaction partially mediate the relationship between marital therapy and physical affection for males.

Based on these results, clinicians may want to consider the different types of physical affection (backrubs/massages, caressing/stroking, cuddling/holding, holding hands, hugging, kissing on the face, and kissing on the lips) and consider assigning physical affection to help clients experience the benefits associated with increasing these behaviors such as relationship satisfaction, partner satisfaction, lower stress, lower blood pressure, lower aggression, and conflict resolution. As our research points to gender differences, it may be helpful for clinicians to assess each partner's preference for the different types of physical affection listed above.

These new findings may direct clinicians to focus more on physical affection when working with distressed couples. Because physical affection is associated with increases in marital satisfaction, focusing on increasing physical affection is a way clinicians can address increasing marital satisfaction. Additionally, clinicians may consider tracking levels of physical affection to assess if their clients are experiencing an increase in physical affection during therapy as results suggest that increases in physical affection are associated with marital therapy for males. Findings support the idea that couples seeking therapy may experience an increase in physical affection, which is associated with both increased marital satisfaction and emotional, mental and physical health benefits.

Limitations

There are several limitations of this study that need to be considered when examining and interpreting results. The sample size was relatively small when using multivariate analysis, as was done in this study. Additionally, the sample consisted primarily of young, Caucasian couples, some of whom were seeking therapy in a low-income community clinic, some of whom

were not. The homogeneity of the sample makes generalizability of the findings limited. Additionally, by design, the study was not a randomized clinical trial. Another limitation was that The Physical Affection Scale, which was used to measure physical affection, does not distinguish between giving or receive physical affection.

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Appendix

Table 1

Correlations

	1	2	3	4	5	6	7	8	9	10	11
1. Treatment Condition	1										
2. Wife Affection T1	-.444**	1									
3. Husband Affection T1	-0.354**	0.710**	1								
4. Wife Change DAS	0.396**	-0.351**	-0.244**	1							
5. Husband Change Das	0.282*	-0.257*	-0.125	0.323**	1						
6. Wife Affection T2	-0.405**	0.800**	0.679**	-0.213	-0.064	1					
7. Husband Affection T2	-0.416**	0.687**	0.753**	-0.222	0.100	0.760**	1				
8. Wife Education	0.043	0.060	-0.035	-0.099	-0.048	0.129	0.093	1			
9. Husband Education	0.173	-0.146	-0.212*	-0.024	-0.012	-0.201	-0.136	0.357**	1		
10. Number of Children	0.235*	-0.479**	-0.489**	0.212	0.097	-0.330**	-0.366**	-0.015	0.217*	1	
11. Years Married	0.101	-0.404**	-0.421**	0.097	0.019	-0.401**	-0.357**	0.001	0.247*	0.682**	1

Note: ** $p < .001$, * $p < .01$

Table 2

Standardized and unstandardized statistical results

	Unstandardized	Standardized	<i>p</i>
Actor effects husband			
T1PA → T2PA	.52	.52	.00
Treatment → T2PA	-.30	-.17	.04
Change in DAS → T2PA	.03	.26	.00
Education → T2PA	.01	.03	.65
Length of marriage → T2PA	.00	-.03	.78
Number of children → T2PA	.01	.03	.79
Actor effects wives			
T1PA → T2PA	.66	.72	.00
Treatment → T2PA	-.23	-.12	.09
Change in DAS → T2PA	.01	.09	.17
Education → T2PA	.01	.04	.60
Length of marriage → T2PA	-.01	-.11	.19
Number of children → T2PA	.06	.13	.14
Partner effects			
Wives change DAS → HT2PA	.00	.04	.58
Husbands change DAS → WT2PA	.01	.14	.03
HT1PA → WT2PA	.14	.14	.18
WT1PA → HT2PA	.26	.28	.01

Note: T1PA = time 1 physical affection, T2PA = time 2 physical affection, DAS = marital satisfaction measure, HT1PA = husband physical affection at time 1, HT2PA = husband physical affection at time 2, WT1PA = wife physical affection at time 1, WT2PA = wife physical affection at time 2.

Figure 1

Analytic model