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**TRAUMA AND TOUCH: APPREHENSION OF TOUCH AND RELATIONSHIP QUALITY
IN SURVIVORS OF MILITARY SEXUAL TRAUMA**

by

Danielle Christensen

**Thesis submitted in partial fulfillment
of the requirements for the degree**

of

**HONORS IN UNIVERSITY STUDIES
WITH DEPARTMENTAL HONORS**

in

**Psychology
in the Department of Psychology**

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Spring 2016

Abstract

Sexual assault is linked to poor romantic relationships but sexual assault in the military is linked to more severe outcomes than civilian assault (Surís et al., 2007). One in four women Veterans report military sexual trauma (MST; VA, nd). MST is highly correlated with Post-Traumatic Stress Disorder and lower relationship satisfaction, which is problematic as relationship quality buffers against PTSD and dysfunction secondary to MST. Relationship quality is multidimensional and includes satisfaction with physical touch; the effects of sexual trauma on touch apprehension have not been examined in those with MST. Moreover, it is not clear whether contact MST (e.g., rape) and non-contact MST (e.g., verbal harassment) differentially relate to touch apprehension and relationship quality. Findings from this line of research could provide helpful insights into ways to improve individual and couple-level interventions to address PTSD and MST. The current study examined the association of MST type (contact/non-contact), PTSD severity, touch apprehension, and relationship quality in 215 partnered women Veterans who reported a history of MST. The majority of the sample (74.9%) reported contact MST. Bivariate analyses revealed that higher touch apprehension was negatively associated relationship quality ($r=.20, p<.01$) and touch apprehension was higher in Veterans who reported contact MST ($M=36.14, SD=9.76$) vs. non-contact ($M=40.95, SD=9.77$) MST (higher scores indicate lower touch apprehension). In a step-wise regression accounting for demographic risk factors, Touch apprehension was associated with lower relationship quality (partial $r=-0.24, p<.01$). MST type was nonsignificant. A model of the possible moderating role of MST type with touch apprehension and relationship quality was investigated but was nonsignificant. These findings suggest that distinguishing between type of MST (e.g., contact vs non-contact) and assessing touch apprehension may be useful when

studying or treating MST. Understanding the link between touch apprehension and relationship quality in survivors of MST through the use of such measures provide helpful information that contributes to a more complete clinical understanding.

Keywords: Veterans, Relationship Quality, Touch, MST, Contact assault,

Acknowledgements

I have put countless hours of work into this project. However, those hours would have come to naught without the guidance and mentorship of Dr. Rebecca Blais. I wish to express my appreciation for her time and effort in pushing me to succeed and learn from my mistakes. I want to thank Crissa Levin for her constant support, encouragement, and edits. I could not have completed this project without my fabulous team of advisors.

I extend the most heartfelt of apologies and expressions of gratitude to my family and friends who helped me get to this point and who endured with me at my weakest throughout this process. I thank you for sticking with me and not giving up, even when I wanted to.

My final, and perhaps most important, statement of thanks goes to the service members of this country about whom I conducted this research. Your sacrifices and honor do not go unnoticed. Thank you for your service.

Table of Contents

Abstract	ii
Acknowledgements	iv
Introduction	1
Method	9
Analytic Plan	11
Results	12
Discussion	14
Limitations	15
References	17
Result Tables	24

Trauma and Touch: Apprehension of Touch in Survivors of MST

Introduction

Sexual assault is linked to poor romantic relationship functioning (DiLilio, David & Long, 1999) but sexual assault in the military is associated with poorer physical and mental health, quality of life, and greater dissatisfaction in relationships than civilian assault (Surís, Lind, Kashner, & Borman, 2007). Military sexual trauma (MST) is reported by 25% of U.S. women Veterans and is defined as any non-consensual sexual contact or advances that occurred during military service (Department of Veterans' Affairs[VA], 2015). MST is highly correlated with post-traumatic stress disorder (PTSD; Frayne et al., 1999; Galbreath, 2015; Katz et al., 2007; Kimerling et al., 2007; Klingensmith, Tsai, Mota, Southwick, & Pietrzak, 2014; Surís & Lind, 2008), which is also highly correlated with relationship dysfunction (Nunnink, Goldwaser, Afari, Nievergelt, & Baker, 2010; Wolfe et al., 1998). Both PTSD and MST are linked to interpersonal relationship strain (Frayne et al., 1999; Goff et al., 2006; Katz, Bloor, Cojucar, & Draper, 2007; Klingensmith, et al. 2014; Nunnink et al., 2010; Surís & Lind, 2008). The importance of positive relationships for returning veterans is well established in the literature. Indeed, positive relationship quality buffers against many of the disorders secondary to MST, such as overall psychological distress, PTSD and depression (Burman & Margolin, 1992; Cohen & McKay, 1984; Holt-Lundstedt, Birmingham & Jones, 2008; Pietrzak et. al, 2010; Wilcox, 2010; James et al., 2013; Shura, 2013; Florian, Mikulincer, & Hirschberger 2002). As returning female veterans with a history of MST, as opposed to those not reporting MST, are at higher risk for PTSD, depression, substance abuse, and low life satisfaction (Frayne et al., 1999; Katz et al., 2007; Klingensmith, et al. 2014; Nunnink et al., 2010; Surís, Lind, Kashner, & Borman, 2007;

Surís & Lind, 2008), it is important to understand tools like relationship quality that can counteract those negative outcomes.

Sexual trauma is associated with overall relationship distress, anxiety during sexual encounters, sexual dysfunction, and avoidance of sex all together (DiLilio, David & Long, 1999; Goff et al., 2006; Jozkowski & Sanders, 2012; Kimerling et al., 2007). Women who report a history of sexual assault, civilian or military, report negative feelings and experiences regarding sexual contact and their identity as sexual beings (Colangelo & Keefe-Cooperman, 2012; Feinauer, Callahan, & Hilton, 1996; Finkelhor, Hotaling, Lewis & Smith 1989; Meston, Rellini, & Heiman, 2006; Rellini, Vujanovic, Gilbert, & Zvolensky 2012; Rellini & Meston, 2011; Zwickl & Merriman, 2011). History of MST is linked to more sexual disorders and dysfunctions in both men and women Veterans (Kimerling et al., 2007). Couples in which one or both of the partners experienced any form of trauma report lower satisfaction and intimacy (Leonard, Follette, & Compton, 2006). The support given by extant literature to a relationship between sexual trauma and relationship quality indicates the possibility that the impact of MST on Veterans' relationships may extend beyond current knowledge.

Perception of physical contact with another person has been classified into touch avoidant and touch approaching behaviors within the construct of touch apprehension (Richmond & McCroskey, 2004). Anderson and Leibowitz hypothesize that touch avoidance is a basic trait that powerfully impacts relationships (1978). Greater apprehension of touch contributes to a relative lack of interpersonal closeness (Anderson & Leibowitz, 1978; Anderson & Sull, 1985). In a qualitative study with male and female college students, those who avoided touch reported greater fears of physical intimacy, feelings of exposure, weakness and consistent discomfort with being touched (Johansson, 2013).

Survivors of civilian sexual trauma often report an avoidance of sexual contact with a partner because it reminds them of the previous trauma (Goff et al., 2006). In a study investigating the experience of touch in women, those who reported experiencing spousal abuse also tended to report discomfort when touched (Martinez-Banks, 2002). Touch is not only key in sexual encounters with a partner (Choy & Khalib, 2013; Rosenbaum, 2013; Skyler & Bayer, 2010), but is considered a prominent way to give and receive love (Chapman, 1995; Eckstein & Morrison, 1999). Touch can act as a means of communicating social support and devotion to a loved one (Robinson, Hoplock, & Cameron, 2015), and is shown to effectively communicate emotion (Hertenstein et al., 2009). Physical touch and affection is associated with increased relationship satisfaction (Gallace & Spence, 2010; Gulledge et al., 2003). The interplay between trauma and touch and the consequences for relationships may provide new ways to understand sexual trauma.

Investigating the perception of touch following a trauma leads to the question of touch during the event itself. The categorization of sexual assault into incidents involving physical touch versus those without, contact or physical versus non-contact/emotional, is utilized in studies of childhood sexual abuse (Collings, 1995; Haugaard & Emery, 1989; Negriff et al., 2014; Tyrka et al., 2009; DeLilio, David & Long, 1999). In a sample of university men, the experience of childhood sexual abuse involving physical touch/contact was associated with greater somatization, depression, anxiety, hostility, and interpersonal sensitivity than those who experienced non-contact sexual assault (Collings, 1995). With the findings of childhood sexual abuse indicating differences in touch after sexual assault, it is possible that a contact assault in the military such as rape would be associated with poorer perception of touch to a than non-contact event like verbal remarks. The involvement of touch in the assault would therefore relate

to all subsequent experiences of touch. It is possible that applying the concept of touch apprehension to military veterans may improve assessment and understanding of military sexual trauma.

The current study extended upon prior work examining MST, touch apprehension, sexual assault type, and relationship quality separately by combining the experience of MST with investigations of relationship quality via measures of touch apprehension and assault type. It was hypothesized that: (1) touch apprehension will be negatively associated with relationship quality, (2) contact MST will be related to greater touch apprehension, and within the sample of individuals reporting MST, we hypothesize that type of MST will show a moderated effect on relationship quality and touch apprehension. (3) Those with contact MST will have greater touch apprehension and poorer relationship quality than those who only report non-contact MST.

Method

Participants

Two hundred fifteen women Veterans comprised the sample for the current study. The average age of participants was 31.93 years ($SD=6.61$), and the average length of current romantic relationships ranged from two months to 25 years. The modal duration of relationships was six months ($n=7$, 3.3%). Thirty-seven percent of the sample reported income between \$10,000 and \$50,000 per year ($n=80$, 37.20%), forty-four percent reported income between 50,000 and \$100,00 ($n=95$, 44.10%), and fourteen percent reported income greater than \$100,000 ($n=31$, 14.4%). The majority received some college education ($n=198$, 92.10%), and identified as White/Caucasian ($n=179$, 83.3%). Other reported race/ethnicities were African American/ Black ($n=11$, 5.10%), Indian/ Alaska Native ($n=5$, 2.30%), Latino-a/ Hispanic ($n=22$, 10.20%), and Bi-racial/ Multi-racial ($n=10$, 4.70%).

Measures

Participants completed the *Couples Satisfaction Index-Short Form*, a 4-item measure designed to assess the level of satisfaction within a relationship (Funk & Rogge, 2007).

Participants rated their level of agreement with statements about their relationships on a 6-point Likert scale ranging from 0= *not true at all* to 5= *completely true*. A sample item includes: "My relationship with my partner makes me happy." The items are summed for a global score that ranges from 0-21. Higher scores indicate greater relationship satisfaction. Scores below 13.5 suggest significant relationship dissatisfaction (Funk & Rogge, 2007). In the current sample, internal reliability was high, Cronbach's alpha = .94.

Touch apprehension was assessed using the *Touch Apprehension Scale*, a 14-item scale assessing comfort, avoidance, and apprehension of physical touch from or towards another person (Richmond & McCroskey, 2004). The 14 items are rated on a five-point Likert scale ranging from 1=*strongly disagree* to 5=*strongly agree*. A sample item includes "I find it enjoyable to be touched by others." The seven items reflecting touch approaching behavior are summed and added to 42 per scoring requirements. Internal reliability for these seven items was adequate, Cronbach's alpha = .71. The sum of the remaining seven items reflecting touch avoidant behavior is then subtracted from the total of the previous step to form an overall score. Internal reliability for these seven items was also adequate, Cronbach's alpha = .79. Scores lower than 30 indicate touch apprehension while scores greater than 50 indicate touch approaching tendencies.

MST was assessed using the Department of Veterans Affairs (VA) MST screening questionnaire, which includes two items: "When you were in the military, did you receive uninvited and unwanted sexual attention?" and "Did someone ever use force or threat of force to

have sexual contact with you against your will?" (Street & Stafford, 2015). Responses were dichotomously scored (yes/no).

Type of MST, contact vs non-contact, as assessed using a single item designed for this study. Participants were asked to indicate whether they experienced touching, cornering, pressure for sexual favors, verbal remarks, rape, or other. "Other" responses were coded into contact or non-contact by the principal investigator. Examples of "other" MST included kissing, objectification and violated personal space separate from cornering. Participants' MST type was categorized into contact MST if they selected cornering, touching, and/or rape. If they selected verbal remarks or pressure for sexual favors responses were coded as non-contact MST. Cornering was included in touch due to the inability to rule out contact in cornering scenarios.

Procedure

U.S. Women service member/veterans were recruited for the study using Facebook advertising. In order to be eligible for the study, participants had to be over 18 years of age, in a romantic relationship lasting at least 4 months, and report a history of military service. Participants interested in the study navigated from the Facebook advertisement to an online, confidential, anonymous survey website (Qualtrics). All participants were presented with a letter of information and then continued to study measures. Participants completed measures in the same order as no order effects were expected. Following participation, participants were directed to a separate website to enter payment information. To maintain anonymity, the payment website was not linked to their survey data. Participation took approximately 45 minutes and participants were given \$15 compensation. The current investigation was approved by the Institutional Review Board at Utah State University.

Analytic plan

Descriptives for covariates and study variables were calculated. Bivariate associations between relationship quality, touch apprehension, MST type, and the demographic covariates were assessed using Pearson correlations and analyses of variance (ANOVA). Analyses were conducted to compare demographic characteristics between participants that had completed the touch apprehension measure and those that had not. A multivariable stepwise regression of relationship quality on touch apprehension, MST type, and covariates was then conducted. Demographic covariates were entered in step 1 and MST type and touch apprehension were entered in step 2.

To determine if MST type moderated the association of touch apprehension and relationship quality, a regression with interactions was subsequently run. Touch apprehension was converted into a z score. An interaction variable was created using the z score of touch apprehension and MST type. Relationship quality was subsequently regressed on MST type, the z score of touch apprehension, and their interaction term.

Results

Sample Characteristics.

Four hundred ninety four participants completed the online survey. Those who did not have a history of MST were excluded from the sample, resulting in 389 participants. Due to an administrative problem (an extra response added in Qualtrics), touch apprehension was not complete in the entire sample. Two hundred five participants had complete touch apprehension data. Ten participants completed 93% of touch apprehension items. Data imputation on these 10 participants was used to calculate a total touch apprehension score by averaging the participants' responses on the 13 completed items. The average score was then imputed into the missing item. The final sample was comprised of these 215 participants.

Descriptives and Bivariate Associations.

The total number of participants in the study was 494, with only 389 reporting sexual trauma. One hundred seventy-four participants were lost due to incomplete touch apprehension data resulting from the introduction of an extra response item. Analyses were conducted to investigate differences between the lost participants and those with complete data. Participants with a history of MST and touch apprehension had differential participation on the measures.

Participants reported an average touch apprehension score above the cut off for significant apprehension of touch. Scores above 50 indicate a touch approaching personality and scores below thirty indicate significant touch apprehension. Twenty-seven percent of participants reported scores of significant touch apprehension and eleven percent reported touch approaching tendencies. Average scores on the couple satisfaction measure was consistent with relationship satisfaction. Means, standard deviations and bivariate associations for demographic and study variables are displayed in Tables 1 and 2. Lower touch apprehension (higher scores) was associated with greater relationship quality ($p < .01$) and increased age ($p < .05$). Time partnered was significantly correlated with increased age ($p < .01$) and decreased relationship quality ($p < .05$). Participants that identified as white reported greater touch apprehension ($p < .05$). The experience of unwanted sexual attention before joining the military was unrelated to touch apprehension. The experience of contact MST was negatively associated with relationship quality ($p < .05$) and positively associated with touch apprehension ($p < .01$).

Multivariable Modeling.

The step-wise regression of relationship quality on touch apprehension, MST type, and demographic covariates revealed that greater touch apprehension was related to lower relationship quality above and beyond MST type and other covariates $F(8, 206) = 3.04, p=0.003$

(see table 3). The association of MST type with relationship quality, after accounting for touch apprehension and demographic covariates, was nonsignificant ($p > .05$).

To test the moderating role of MST type in relationship quality, a secondary regression was conducted. Though the overall regression was significant, $F(9,205) = 2.849$, $p = .003$, the type of MST was not found to moderate the relationship between touch apprehension and relationship quality.

Discussion

Results from the current investigation highlight the applicability of touch apprehension in research of MST, trauma, and relationships. Consistent with prior research (Johansson, 2013; Martinez-Banks, 2002), touch apprehension was associated with poorer relationship quality in women military service members. Similar to the trend in childhood sexual trauma, the distinction in contact and noncontact abuse returned differential results (Collings, 1995; Hugaard & Emery, 1989; Negriff et al., 2014; Tyrka et al., 2009; DeLilio, David & Long, 1999).

The use of touch apprehension measures may have clinical utility for providers. Future research may look into the role of reducing touch apprehension on improving sexual intimacy and relationship quality in couples. Beyond the sexual aspects of touch, understanding and treating the touch apprehension of survivors of MST may make them more comfortable with touch as a communicator of emotional intimacy and support. The relationship shown in the current investigation creates face-valid support for the ability of improving touch to improve relationship quality and physical intimacy. Future research can test this hypothesis. Using touch as a therapeutic focus can improve relationships through emotional and physical intimacy.

Distinguishing between MST experiences that involved touch and those that did not (e.g., contact/non-contact) follows the previously established practice in cases of childhood sexual

assault (Collings, 1995; Haugaard & Emery, 1989; Negriff et al., 2014; Tyrka et al., 2009; DeLilio, David & Long, 1999). As in those previous studies, contact events were associated with poorer outcomes including lower relationship quality and greater touch apprehension. Providers may find the distinction between assault type useful in understanding relationship dissatisfaction in survivors of MST. It is possible that assessing MST as either contact or non-contact in future research may lead to other differential outcomes. Such outcomes may include overall sexual dysfunction, perception of social support, or trust of others.

Limitations for the current investigation include the loss of 174 participants from incomplete data, which decreased power to detect significant results. Mean imputation was used to extrapolate possible responses for single items of ten participants. The current study was cross-sectional, which prevents us from making causal inferences about the associations of MST type, touch apprehension, and relationship quality. The current sample was limited to women service members, which limits generalizability of findings. Approximately 1% of men Veterans experienced MST and the impact of MST on men Veteran functioning remains largely unknown. The current study did not include PTSD severity, a proven component of Veterans' relationship quality due to low power. That is, 31% of our sample met the cut-off for probable PTSD. Future studies may include PTSD severity in the model to more comprehensively investigate components of relationship quality and touch.

Results of the current study support the hypothesis that the experience of contact MST is associated with touch apprehension and lower relationship quality, though at the bivariate level. Greater apprehension of touch was found to be associated with poorer relationship quality above and beyond other demographic covariates in female veterans. As this study was conducted with only female service members, further research is needed to assess the applicability of current

findings to men. The relationship between touch apprehension and relationship satisfaction indicates that assessing perception of touch may be useful in relationship and sexual assault research and treatment. Future studies may study outcomes on touch apprehension in survivors of MST and those without. Investigations into the effectiveness of interventions to decrease touch apprehension on relationship quality may provide deeper insight into the relationships of our returning veterans.

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Table 1

Participant Characteristics

Measure	<i>M</i>	<i>SD</i>	1.	2.	3.
1. Age	31.93	6.61	----		
2. Time Partnered	69.89	63.23	0.55**	----	
3. Touch Apprehension	37.35	9.96	0.16*	0.08	----
4. Relationship Quality	18.45	5.04	-0.15*	-0.14*	0.21**

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2

Bivariate associations of relationship quality and touch apprehension with dichotomous demographic variables

	Relationship Quality		Touch Apprehension	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Education		<i>t</i> (205)=1.43		<i>t</i> (213)= -0.45
Some College	18.30	5.04	37.44	10.01
No College	20.12	4.85	36.29	9.62
Race		<i>t</i> (202)=-1.77		<i>t</i> (210)=-2.39*
White	18.71	4.93	38.10	9.80
Non-White	17.12	5.39	34.07	10.19
Household Income		<i>t</i> (204)=0.51		<i>t</i> (212)=0.69
50,000 or more	18.35	4.95	37.01	10.30
Less than 50,000	18.71	5.12	37.96	9.48
Pre-Military sexual attention		<i>t</i> (205)= - 0.30		<i>t</i> (213)=0.49
Yes	18.56	4.88	37.08	9.99
No	18.27	5.32	37.77	9.95
MST Type		<i>t</i> (205)=2.31*		<i>t</i> (213)=3.13**
Contact	17.98	5.22	36.14	9.76
Non-Contact	19.81	4.22	40.95	9.77

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 3

Stepwise Regression Analyses Predicting Relationship Quality

	Relationship Quality
	Partial <i>r</i>
Step 1	
Education	-0.07
Race	0.14*
Income	0.03
Age	-0.09
Time Partnered	-0.06
Pre-Military Sexual Attention	0.02
Step 2	
Education	-0.07
Race	0.09
Income	0.05
Age	-0.11
Time Partnered	-0.07
Pre-Military Sexual Attention	0.02
Touch Apprehension	0.21**
MST Type	-0.08

Danielle Christensen

Utah State University Class of 2016

Honors Reflection Statement

My experience in the honors program at Utah State University was a rollercoaster ride. I loved many of the opportunities and experiences I was afforded through the program, yet had many struggles and challenges. Overall, I am proud of my completion of the Honors program at Utah State University.

Many of the positive experiences I had in the Honors program were related to having the opportunity for more specialized education. The completion of contracts in my courses was at times taxing. Taking an intense course load with the addition of contract work lead to many stressful nights and full lists of tasks to complete. I did, however, find mentors that facilitated me doing interesting and applicable projects to my area of study. The honors program afforded me the freedom to make my own projects to fit my interests and needs. Many of the greatest growing and learning experiences in my degree came about through contract work.

In regards to funding from the Honors program, I could not be more grateful. The Honors program made it possible for me to study abroad, fund research, and present at international conferences. Some of the highlights of my undergraduate career were brought about through the help of the Honors program.

My experience completing an honors thesis was a tough one. I expected to do a great amount of work, but the relationship with my mentor was the true test of my capabilities. I am proud that I completed the capstone project for there were many times that I wanted to quit. I would have had more success if there was a way for the honors program to facilitate a meeting or a short establishment of expectations with new mentors.