The Relationship of Attitudes about Touch with Depressive Symptoms among Women Who Report Abuse

by

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ABSTRACT

Touch appears to be an important component for understanding psychological and emotional well-being, as well as the formation and maintenance of interpersonal relationships later in life. While research about touch in relation to these topics is gaining momentum, there is still little evidence on the specific effects and processes that take place when touch is negative or harmful. The current study examined how women who have experienced physical or sexual abuse perceive touch in the context of interpersonal relations and in turn, how these experiences, perceptions and attitudes are related to depressive symptoms. Taking into consideration the significance of interpersonal touch, I speculated that 1) attitudes towards touch would be more negative among women who reported physical or sexual abuse than among women who did not; 2) among women who reported past abuse, increased abuse severity would predict increased current depressive symptoms; and 3) among women who reported past abuse, current attitudes towards touch would mediate the relationship between abuse severity and depressive symptoms. As predicted, results indicated that women who reported physical or sexual abuse had less positive attitudes towards touch than women who did not report any abuse. Echoing prior research, reports of childhood and adult abuse predicted increased depressive symptoms. Finally, for women who reported childhood abuse, Discomfort with Social Touch was a significant partial mediator of depressive symptoms, whereas for women who reported adult abuse, both Desire for More Partner Touch and Discomfort with Social Touch were significant partial mediators of depressive symptoms. Results suggested that negative attitudes towards general social touch, in particular, may play a strong role in mediating depressive symptoms among women who reported abuse.

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Physical touch is the earliest and most fundamental means of communication (Barnett, 1972). Although we usually think of communication as verbal, touch in combination with nonverbal expressions (body movements, gestures, facial expressions, etc.) can be considered a language as well. Touch has ontogenetic primacy, which means that in the first years of life, the significance of nonverbal communication, particularly through touch, exceeds that of verbal communication (Burgoon et al. 1996). As early as 1963, animal studies examining maternal deprivation and physical contact discovered that the role of touch in social and emotional development is comparable to that of the need for food (Harlow, 1963). As the skin is the largest of all the sensory organs, touch is a fundamental way of relating to the environment (Field, 2001; Frank 1957). It is considered a basis for conveying meaningful social interaction (Barnett, 1972). And it contributes to cognitive, neurological, and socioemotional development from infancy though childhood (Hertenstein, 2002; Stack, 2001). Among humans, touch is a medium for expressing emotion, compliance, power, sexuality, and liking (Hertenstein et al., 2006b; Heslin & Alper, 1983).

Touch and Attachment

Much of the previous research surrounding touch has been conducted in relation to attachment theory. Bowlby's (1973) theory of attachment explains the biological nature of attachment formation, specifically to the attachment figure, which is usually the mother. Touch appears to play a crucial role in the formation of attachment in infancy and serves as a secure, tangible indicator of safety. Infants possess innate behaviors to ensure the close proximity of their primary caregivers, which enhances their chances of survival. Essentially, the attachment relationship acts as a prototype for all future social relationships, including romantic partners (Bowlby, 1980, 1988).

Ainsworth and colleagues (1978) explored attachment behaviors in infancy using the Strange Situation paradigm. Three major attachment styles were identified: Secure, anxious-ambivalent, and anxious-avoidant. The styles varied in behaviors and patterns of physical contact between the mother and the infant, and it was determined that the overall quality, not quantity, of the physical contact was essential for the development of secure attachments. Thus, attachment theory provides a well-established basis for understanding developmental precursors of individual differences in attitudes about touch.

Individual Differences in Attitudes about Touch

Other research from a social and personality perspective has focused on how gender (e.g., Fisher, Rytting, & Heslin, 1976; Andersen et al., 1987) and personality traits (e.g. Fromme et al., 1989) predict comfort with touch and being touched. Specifically, Andersen and Leibowitz (1978) discovered that men were more uncomfortable with same-sex touch, in comparison to women who were more uncomfortable with opposite-sex touch. In an empirical and theoretical review of observational studies, Stier and Hall (1984) concluded that women were more likely to both initiate and receive touch than men. The reviewed literature also suggested that women have a tendency to respond more positively to touch than men. Fromme and colleagues (1989) discovered that individuals' comfort with touch was directly related to constructs such as satisfaction with life, oneself, and one's childhood, and with self-confidence. Thus, comfort with touch and being touched is related to a number of social and personal factors, and it is clearly a social phenomenon that can vary dramatically across individuals.

Influences of Touch during Childhood

Research has suggested that comfort or discomfort with touch develops during childhood (e.g. Field, 2002; Jones & Yarbrough, 1985) and that the development of

healthy touch from infancy though childhood appears to have a significant impact on physical, psychological, and emotional well-being (Montagu, 1986; Field, 2001, Spence 2002). Field (1995) discovered significant decreases in depression, anxiety, and stress levels among children who were exposed to increased interpersonal touch. Takeuchi and colleagues (2009) found that lower frequency of parental touching during childhood predicted the development of depression and a poorer image of one's romantic partner during later adolescence and early adulthood. Similarly, Cochrane (1990) demonstrated a strong association between current unsatisfactory physical contact and a high incidence and severity of depression. The results also indicated that chronic, rather than intermittent, and current, rather than childhood, unsatisfactory physical contact experiences were more closely linked to depression. Given these findings, evidence is present that current emotional well-being can be affected by negative experiences with touch, both during childhood and adulthood.

Touch as Emotional Communication

Touch not only has the powerful capacity to influence emotional well-being, but the ability to convey human emotion as well. Research has indicated that touch communicates either positively valenced warmth and intimacy or negatively valenced pain or discomfort. Touch also intensifies the emotions displayed through other forms of communication, such as facial expressions or vocalizations (Knapp & Hall, 1997). In more recent studies, research suggests that different kinds of touch alone can successfully signal various identifiable emotions (Hertenstein et al., 2006a). One study showed that a simple experience of being touched on the forearm by a stranger, without any other communication cues, enabled participants to identify specific emotions associated with that touch (Hertenstein, Keltner, App, Bulleit, and Jaskolka, 2006a). Participants could decode anger, fear, disgust, love, gratitude, and sympathy at levels

considered above-chance. These accuracy rates were comparable to those previously observed in facial and vocal recognition studies of emotion (Elfenbein & Ambady, 2002). Also, through extensive behavioral coding, researchers identified specific touch behaviors associated with each of the emotions. For example, anger was communicated with hitting and squeezing, disgust was communicated with a pushing motion, and fear was communicated with trembling. Thus, it is valuable to highlight that touch by itself can communicate at least four negatively valenced emotions – anger, fear, sadness, and disgust.

Negative Touch

Touch appears to be an important component for understanding psychological and emotional well-being, as well as the formation and maintenance of interpersonal relationships later in life. While research about touch as a form of emotional communication and its influence on interpersonal relations is gaining momentum, there is still little evidence on the specific effects and processes that take place when touch is negative or harmful. For example, Heslin (1974) identified five specific taxonomic categories of touch: (1) functional/professional, (2) social/polite, (3) friendship/warmth, (4) love/intimacy, and (5) sexual arousal. For the most part, this categorization assumes a positive context for touch.

Touch as a form of interpersonal communication can have various meanings depending on the context. The meaning is affected by several aspects, including but not limited to the body parts that are involved, the duration of the touch, the intensity of the touch, the situation in which the touch occurs and the emotions created by that situation, and the relationship between the persons involved (Heslin & Alper, 1983). All of these aspects can be complicated by social norms pertaining to who is allowed to touch and what is considered an appropriate context for such touching behavior (Heslin & Alper,

1983). When these social norms are broken and the touch becomes inappropriate, grounds for trauma arise. Although trauma can manifest in many ways, it involves potential harm to an individual on many levels, including physical, psychological, and emotional. Research focused on the specific effects of touch as an aspect of trauma, and the effects of such trauma on future touch attitudes and experiences, is limited. In the current study, the potential effects of negative touch in the form of self-reported physical or sexual trauma in childhood or adulthood were examined.

Potential Long-Term Effects of Abuse and Trauma

According to the *Diagnostic and Statistical Manual for Mental Disorders (DSM-5)*, exposure to actual or threatened death, serious injury, or sexual violence, either to oneself or to someone close, is a sufficient criterion for trauma exposure (American Psychiatric Association, 2013). Traumatic events may include maltreatment or abuse, and can contribute toward vulnerability to depression throughout the lifespan (Brown & Harris, 1993). Moreover, a history of physical, sexual, or emotional childhood abuse is a risk factor for depression. There is a vast literature supporting the relationship between maltreatment in childhood and the development of adult psychopathology in both clinical and community settings. Jumper's (1995) meta-analysis indicates significant associations between the experience of child sexual abuse and subsequent difficulties in psychological adjustment, measured by psychological symptomology, depression, and self-esteem. Neumann and colleagues' (1996) meta-analysis also yielded similar, significant results in association with childhood sexual abuse, specifically in the domains of anxiety, anger, depression, sexual problems, impairment of self-concept, interpersonal problems, and more.

Furthermore, the association between childhood trauma and later problems may be especially severe among women. In a community sample, lifetime psychopathology

was examined in individuals who reported either physical or sexual abuse in childhood; results indicated that women, but not men, who reported childhood physical abuse had significantly higher lifetime rates of major depression (MacMillan et al., 2001). Furthermore, women are more likely than men to be the victims of sexual assault and child sexual abuse (Tolin et. al., 2006). Further, the occurrence of childhood victimization increases the risk for adult victimization by any perpetrator, and specifically for women, by an intimate partner (Desai et. al., 2002; Briere & Elliot, 2003).

Trauma and Negative Touch

Childhood sexual and physical abuse is relatively common in the general population (Briere & Elliot, 2003) and is associated with abuse in adulthood as well as a wide variety of psychological symptoms. Based on the previous literature, there is reason to believe that dominating, invasive, or exploitative touch may be characteristic of many kinds of trauma. However, there is minimal research focused on this connection. The science behind touch provides an ideal framework for better understanding how this kind of trauma influences psychological adjustment and relationships years later. The research discussed above (e.g., Jumper, 1995; Cochrane, 1990) suggests that in terms of consequences, lacking sufficient positive touch experience may not be the same as having one, or a few, powerful negative touch experiences. Furthermore, it provides reason to believe that if an individual has sufficient experience with inappropriate, uncomfortable, or unsatisfactory touch, there may be adverse implications not only for his or her attitudes and perceptions about touch, but also for psychological and physical health later in life. These negative forms of touch could include but are not limited to intrusive, seductive, painful, and/or controlling touch.

Current Study

The current study examined how women who have experienced physical or sexual trauma perceive touch in the context of interpersonal relations and in turn, how these experiences, perceptions and attitudes are related to depressive symptoms. Women were chosen as participants because they are more likely to report a history of physical or sexual abuse (Brown, Recupero, & Stout; 1995) and report higher rates of depression (Weissman, Bruce, Leaf, Florio, & Holzer; 1991). Taking into consideration the significance of interpersonal touch, it was hypothesized that 1) attitudes towards touch would be more negative among women who reported physical or sexual abuse than among women who did not; 2) among women who reported past abuse, increased abuse severity would predict increased current depressive symptoms; and 3) among women who reported past abuse, current attitudes towards touch would mediate the relationship between trauma severity and depressive symptoms.

Methods

Participants

Undergraduate students from Arizona State University were solicited to complete the survey. A total of 1,119 women participated in the survey. Their ages ranged between 18 and 55 with a mean (*SD*) age of 23.0 (5.9). With respect to the highest level of educational attainment, 57.8% reported having some college education, 33.2% reported having an Associate's degree, 8.3% reported having a Bachelor's degree, .1% reported having completed a degree at a trade or technical school, and .6% reported having some postgraduate college or having obtained a postgraduate degree. Regarding financial status, 11.3% reported not having enough money to meet their basic needs, 17.9% reported that they usually manage to pay their bills each month, 64.5% reported having some extra money, and 6.2% reported having plenty of money. Most participants were

Caucasian/White/European American (73.4%), while 13.1% reported other (including mixed, 4.9% were Asian or Asian American, 4.4% were African or African American, 2.0% reported being Native American or Alaskan Native, 1.9% were Arab or Arab American, and .4% were Native Hawaiian or other Pacific Islander. 24.5% of the participants reported being of Hispanic ethnicity.

For those who reported an episode of abuse either in childhood or adulthood (*N*=600), their ages were between 18 and 55 years old with a mean (*SD*) age of 24.0 (6.6). With respect to the highest level of educational attainment, 53.2% reported having some college education, 39.0% reported having an Associate's degree, 6.9% reported having a Bachelor's degree, .2% reported having completed a degree at a trade or technical school, and .8% reported having some postgraduate college or a postgraduate degree. Regarding financial status, 14% reported having insufficient money for their basic needs, 20.2% reported they managed to pay their monthly bills, 59.7% reported having some extra money, and 6% reported having plenty of money. Regarding race, 74.8 % reported being Caucasian/White/ European American, 13.7% reported other (including mixed), 4.3% reported being Asian or Asian American, 3.8% reported being African or African American, 1.6% reported being Native American or Alaskan Native, 1.5% reported being Arab or Arab American, and .2% reported being Native Hawaiian or other Pacific Islander. 25% of the participants reported being of Hispanic ethnicity.

Procedure

Participants completed an online survey hosted on SurveyMonkey, for which they received course credit or extra credit. The study was considered exempt by the university's institutional review board, and participation was taken as informed consent.

Measures

All questionnaires used in the study can be found in Appendix A.

Attitudes about touch in romantic relationships. The Touch Scale was used to assess attitudes towards touch in the context of adult romantic relationships (Brennan, Wu, & Loev, 1998). A 24-item version was used to measure differences in both touching and being touched by partners. Specific constructs included were display of public touch, touch as a safe haven to alleviate stress or anxiety in self or partner, a desire for more touch, touch to express sexuality or communicate sexual intent, touch for proximity or to communicate affection, aversion to partner's touch, and touch as a form of coercion or to exert control. Responses were made using a 7-point Likert-type scale ranging from 1 ("*not at all like me"*) to 7 ("*very much like me"*). Based on factor analysis, a composite with the averaged items was created for each construct (Cronbach's alpha = .80). Items 5 and 19 were omitted due to low correlations with other construct items.

Discomfort with social touch. The Social Touch Questionnaire (Wilhelm, Kochar, Roth, & Gross, 2001) was used, which is a brief self-report measure of discomfort with social touch. It is composed of 20 items indicating how characteristic or true each item is for the participant. Each item was rated on a 5-point scale ranging from 0 (*"not at all"*) to 4 (*"extremely"*). Items were selected to reflect a broad sample of affects and attitudes surrounding social touch, such as giving versus receiving touch, touch in a public versus private place, touch with an acquaintance versus a stranger, and touch having sexual versus non-sexual connotations. A composite with the average of these items was created (Cronbach's alpha = .62), based on preliminary factor analyses. Items 12, 14, 19, and 20 were omitted due to low factor loadings.

Physical or sexual abuse in childhood. The Childhood Trauma Questionnaire (CTQ) was used to assess if abuse occurred in childhood (Bernstein et al., 1994). We used a shortened 10-item version with a 5-point Likert-type scale indicating how often each item occurred from 1 (*"never true"*) to 5 (*"very often true"*). Item 3 (*"I*

was punished with a belt, a board, or cord, or some other hard object") was because this may be an acceptable practice in some cultures and generational cohorts. Reliability analysis yielded a Cronbach's alpha score of .90.

Physical or sexual abuse in adulthood. To assess occurrence of abuse in adulthood, we used a modified version of the CTQ (described above), in which CTQ items were worded to apply to adult trauma. This consisted of 8 items and used a similar response scale. Reliability analysis yielded a Cronbach's alpha score of .92.

Depressive symptoms. The Center for Epidemiological Studies Depression Scale (CES-D; Radloff 1977) was used to screen for depression. The CES-D consists of 20-item self-report measures of which each item was reported on a 4-point scale assessing how often the items occurred in the past week. The scale ranged from 1 (*"rarely or less than one day"*) to 4 (*"most of the time or 5-7 days"*). A composite with the average of these items was created with a Cronbach's alpha score of .80.

Results

All statistical analyses were conducted using the Statistical Package for Social Science (SPSS) version 22.1.

Preliminary Analyses

Trauma group assignment. Women who reported a mean childhood or adult trauma score of less than or equal to one were assigned to the No Trauma group, whereas women with scores greater than one were assigned to the Trauma group. A score of greater than one indicated that at least one traumatic event was reported. The rationale for this inclusion criterion was due to underreporting patterns among women who have been victims of physical or sexual abuse (Della Femina et al. 1990).

Construct validity of touch attitude scales. In order to determine the construct validity of the touch questionnaires, exploratory factor analyses of responses to

the Touch Scale and Social Touch Questionnaire were conducted. Values obtained for the Kaiser-Meyer-Olkin Measure of Sampling Adequacy test and Barlett's Test of Sphericity indicated that both factor analyses were valid. After obtaining factor loadings for items on the Touch Scale (see Table B1 in Appendix B for factor loadings), five factors were identified and mean composites were created based on these factors to serve as dependent variables. Items with loadings lower than .35 on any factor were excluded. In order of variance explained, the five composites were named *touch for security and affection, desire for more partner touch, dissatisfaction with partner touch, touch for sex,* and *discomfort with public touch*. After further examining correlations among the items in each composite, we excluded Item 19 from dissatisfaction with partner touch due to low correlation with the other items; we excluded Item 5 from desire for more partner touch because it was moderately correlated with items in the other composites.

A factor analysis of the Social Touch Questionnaire was also conducted. Items with factor loadings less than .32 were not included. After obtaining factor loadings (see Table B2 in Appendix B), we identified one factor and created a mean composite named *discomfort with social touch*.

Correlations. Next, correlational analyses among all study variables were conducted (see Table 1). Results revealed that several of the Touch Scale composites were not related to either trauma exposure or depression symptomology, therefore we excluded them from subsequent path analyses. For the model including childhood trauma, we used the composites of dissatisfaction with partner touch, desire for more partner touch, and discomfort with social touch. For adult trauma, we used the composites desire for more partner touch, touch for security and affection, and discomfort with social touch. The correlations of display of public touch and touch for sex with depressive symptoms were not significant.

Table 1.

Pearson Correlations among Childhood and Adult Trauma Severity Ratings, Touch Attitudes, and Depressive Symptoms for Women Reporting Childhood or Adult Abuse

	1	2	3	4	5	6	7	8
1. Childhood trauma	-							
2. Adult trauma	.57**	-						
3. Dissatisfaction with partner touch	.13**	.10*	-					
4. Desires more partner touch	.13**	.18**	.25**	-				
5. Discomfort with public touch	.10*	.04	.30**	.01	-			
6. Touch for security and affection	-.17**	-.08	-.29**	.06	-.57**	-		
7. Touch as sexual	-.08*	-.05	-.17**	.02	-.45**	.59**	-	
8. Discomfort with social touch	.22**	.10*	.20**	-.03	.34**	-.28**	-.17**	-
9. Depression symptoms	.16**	.17**	.18**	.18**	.10*	-.07	-.04	.17**

Note. *N*s ranged from 583 to 600.

*$p < .05$. **$p < .01$.

Group Differences in Attitudes about Touch

Next, I tested whether women who reported past physical or sexual abuse had more negative attitudes regarding touch than women who did not report any abuse (see Table 2 for means). There were significant differences between the groups for two of the six touch composites: dissatisfaction with partner touch, $F(1, 1409) = 17.87$, $p < .001$, and desire for more partner touch, $F(1, 1408) = 17.06$, $p < .001$. The composite of touch for sex was marginally statistically different between groups, $F(1, 1406) = 3.03$, $p = .082$. Dissatisfaction with social touch, display of public touch, and touch for security and affection were not statistically significantly different between groups.

Table 2.

Means and Standard Errors of Touch Attitude Ratings by Women Reporting Past Physical or Sexual Abuse and Women Reporting No Abuse

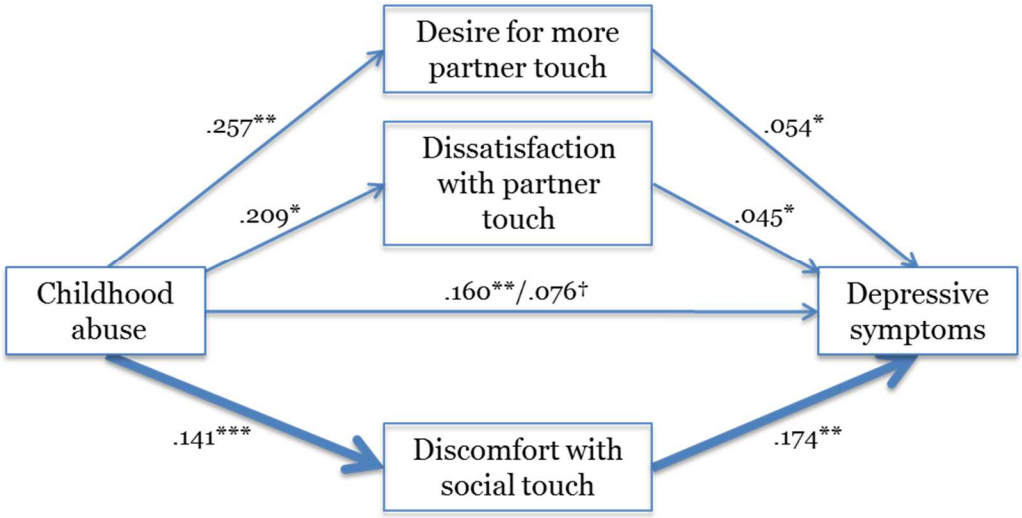
Touch attitudes	Past abuse *M (SE)*	No past abuse *M (SE)*	p_{diff}
Discomfort with general social touch	1.64 (.02)	1.59 (.03)	.140
Touch in close relationship subscales			
Touch for security and affection	5.21 (.05)	5.11 (.05)	.165
Desire for more partner touch	2.70 (.05)	2.37 (.06)	<.001
Dissatisfaction with partner touch	2.59 (.05)	2.26 (.06)	<.001
Touch for sex	4.88 (.05)	4.75 (.06)	.082
Discomfort with public touch	3.10 (.05)	3.12 (.06)	.802

Note. p_{diff} refers to the significance of the difference between groups.

Path Analyses

I then created two mediation path models, one for childhood trauma and another for adult trauma, and hypothesized that trauma severity would be a significant predictor of current depressive symptoms, but that this effect would be mediated by attitudes about touch.

Parallel multiple mediator models were tested for childhood trauma and adult trauma separately. The relationship between childhood trauma and depressive symptoms was partially mediated by discomfort with social touch. As Figure 1 illustrates, the direct effect of childhood abuse on depressive symptoms was initially significant with no mediators in the mode. With the addition of mediators, this effect became only marginally significant. The unstandardized regression coefficient for childhood trauma



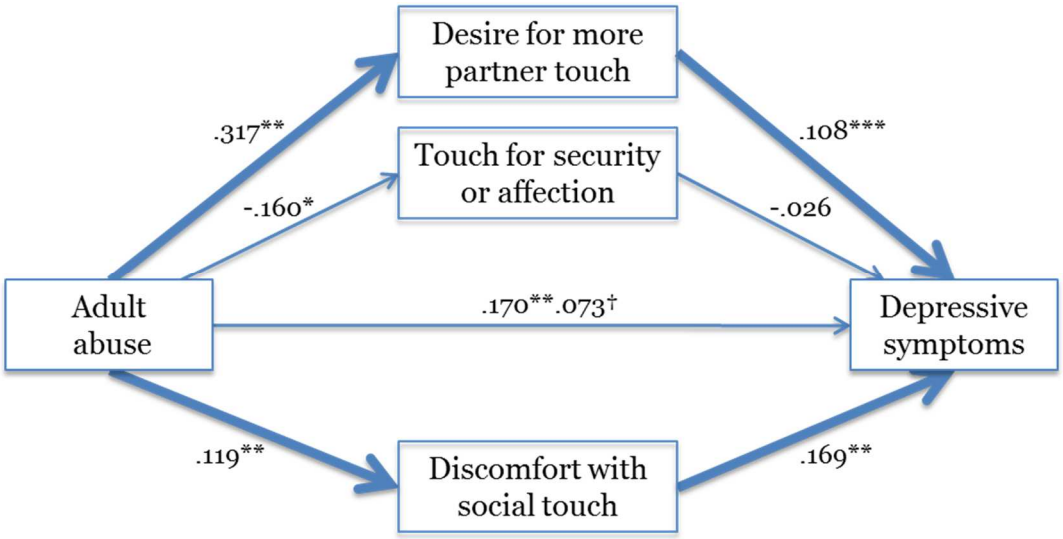
**$p < .01$ level (2-tailed).
*$p < .05$ level (2-tailed).
†$p < .10$ (2-tailed).

Figure 1. Path diagram of the parallel multiple mediator model for childhood abuse

Note. Although it appears that the mediation pathways for Desire for More Partner Touch and Dissatisfaction with Partner Touch should be significant, when controlling for the other mediators, only Discomfort with Social Touch emerged as a significant mediation pathway.

as a predictor of discomfort with social touch was statistically significant, as was the regression coefficient for discomfort with social touch as a predictor of depressive symptoms. The indirect effect was .05, which was determined to be statistically significant using a bootstrapping procedure (5,000 samples) to estimate the standard error, 95% bias corrected *CI* = .02 to .09. Looking at the individual mediational pathways for each of the proposed mediators revealed that only discomfort with social touch significantly mediated the effect of childhood trauma on depression (indirect effect = .02, 95% bias corrected *CI* = .01 to .05).

The relationship between adult trauma and depressive symptoms was partially mediated by discomfort with social touch and desire for more touch. As Figure 2 illustrates, the initial direct effect of adult trauma on depressive symptoms was significant. With the addition of the proposed mediators, this effect became only



**p < .01 level (2-tailed).
*p < .05 level (2-tailed).
†p < .10 (2-tailed).

Figure 2. Path diagram of the parallel multiple mediator model for adult abuse

marginally significant. The unstandardized regression coefficient for adult trauma as a predictor of discomfort with social touch was statistically significant, as was the regression coefficient for discomfort with social touch as a predictor of depressive symptoms. The total indirect effect was .06, which was determined to be statistically significant using a bootstrapping procedure (5,000 samples) to estimate the standard error, 95% bias corrected *CI* = .03 to .09. Looking at the individual mediational pathways for each of the proposed mediators revealed that discomfort with social touch significantly mediated the effect of adult trauma on depression, (indirect effect = .02, 95% bias corrected *CI* = .01 to .04), as did the desire for more touch, (indirect effect = .03, 95% bias corrected *CI* = .03 to .09).

Discussion

Touch is an important component of emotional well-being and interpersonal relations, but its impact on the individual is not yet well understood. The present study examined how past experiences of touch in its most negative forms, physical and/or sexual abuse, are related to current attitudes about both social and intimate touch, and how these attitudes are related to depressive symptoms. Hypotheses were supported, however not all variables were significant mediators within the models.

Group Differences in Touch Attitudes

Significant group differences were found between women who had experienced past abuse and those who had not in two aspects of touch in intimate relationships. Women who reported previous abuse had both more dissatisfaction with their partners' touch and a greater desire for more touch from their partners. Also, a trend toward a group difference was discovered for touch for sex, indicating that women who reported past abuse tended to use touch to express sexuality or sexual intent more so than women who had not reported past abuse. Taken together, these results suggest that experiences

with abusive touch affected women's feelings about touching and being touched, and possibly their values or beliefs surrounding touch. Those who have been abused could have a hindered ability to identify genuine emotional communication though touch. Development of positive aspects of intimate relationships, such as trust and respect, may be difficult for someone who has experienced past trauma or abuse. The ability to understand the motives behind someone's touch may be disturbed as well. Touch can be important to a person's sense of security, their positive identification with their bodies, and their basic acceptance of self. Exposure to abusive or traumatic touch could cause a disruption in several of these personal aspects, and thus difficulties and dissatisfaction with a partner's intimate touch could occur. Therefore, if the need for touch is not satisfied, these individuals need to compensate for that dissatisfaction possibly through the longing for more touch. Whether it is through sexual means or solely desires, a hunger for more touch is present.

Relations among Trauma, Touch Attitudes, and Depressive Symptoms

As expected, for women who reported past abuse, increased abuse severity significantly predicted increased current depressive symptoms. Previous literature indicates that individuals who have experienced past trauma are at an increased risk for depression and other psychological symptoms (Brown & Harris, 1993). Therefore, it makes sense that the increased severity of the abuse influenced the current level of depressive symptoms. However, among women who reported past abuse, current attitudes about touch only partially mediated the relationship between trauma severity and depressive symptoms.

Childhood trauma. None of the attitude measures regarding touch in romantic relationships were significant mediators of the relations between childhood trauma and current depressive symptoms. However, discomfort with general social

touch was a significant partial mediator in the path model. While dissatisfaction with partner touch and desire for more partner touch were significant mediators in path models when not controlling for the other variables, the fact that discomfort with social touch was the only significant partial mediator in the multiple parallel model reflects the strength of its influence compared to the other touch composites. These results suggest that discomfort with general social touch has a larger impact on depressive symptoms for women who reported previous trauma in childhood. Experiencing abuse in childhood can have severe and long- lasting effects that increase the risk of future abuse in adulthood (Desai et. al., 2002; Briere & Elliot, 2003). This fundamental sense of fear and helplessness experienced in childhood carries over into adulthood, setting the stage for further psychological complications. Disrupting an individual's sense of safety and security so early on could cause that person to see the world as a dangerous, stressful place. Socially normative touching behaviors can be misunderstood and uncomfortable. Differentiating who is allowed to touch and what is an appropriate context for such touching behaviors could be difficult and anxiety producing. These tasks seem somewhat intuitive for individuals who have not experienced past trauma, but for those who have, they can be daunting and cause aversion to touch in all forms. Exposure to abuse in childhood could possibly heighten the sensitivity and awareness of the impact of touch and cause these individuals to react more negatively. As indicated by Fromme and colleagues (1989), individuals' comfort with touch was directly related to constructs such as satisfaction with life, with oneself, with one's childhood, and with self-confidence. If an individual has dissatisfaction with one's childhood or self, potentially due to trauma, feelings of anxiousness, sadness, hopelessness or pessimism, guilt, or worthlessness may occur, all of which are symptoms of depression, and these depressive symptoms can be heightened through discomfort with social touch.

Trauma in adulthood. In the model of adult trauma effects, desire for more partner touch and discomfort with social touch were partial mediators for depressive symptoms. A desire for more touch indicates feelings of touch deprivation (e.g., *"Sometimes I wish my partner would touch me more"*) and could be characteristic of unsatisfactory physical touch. As suggested in previous research, there was a strong association with unsatisfactory physical contact and a high incidence and severity of depression (Cochrane, 1990). The study also indicated that chronic and current unsatisfactory physical contact with one's romantic partner was more closely linked to depression, when compared to the model of childhood trauma effects. This could indicate why a desire for more partner touch was a statistically significant partial mediator for current depressive symptoms among women in the adult trauma path model, but not in the childhood trauma path model.

Furthermore, within intimate relationships, the role of touch has certain functions, such as providing comfort or pleasure that may be challenging to experience for some individuals who have undergone trauma. Traumatic experiences seem to produce both a dislike of touch and a hunger for positive touch; a positive touch that is respectful, nurturing, and genuine, and not sexual, confusing, or unwanted. When this hunger for positive touch is not satisfied or individuals who have had trauma have not experienced this type of healthy touch, there is potentially a sense of something lacking and feelings symptomatic of depression may occur. The ability to understand emotional communication though physical touch is an important factor of mental health. Those who are comfortable with touching and being touched may have fewer emotional problems and better or more accurately understand others when they communicate through touch about feelings or relationships.

Limitations and Directions for Future Research

While the present study provides a better understanding of how past physical or sexual abuse relates to current attitudes about touch and depressive symptoms, several important limitations must be addressed. Only women college students were studied and the incidence of trauma was measured by self-report questionnaire and not by clinical assessment. Therefore, there could potentially be a reporting bias among the participants. Also, these reports were retrospective, and the childhood questionnaire concerns events that may have happened many years prior to the present. The parallel multiple mediation path models used examine attitudes about touch in a larger context. However, a closer examination of each individual mediation pathway not controlling for other variables might provide more information on how each of the attitude measures relate to depression specifically.

The current study raises a number of directions for future research. Few studies on touch in relation to trauma have been published. Further research is needed to shed light on potential explanations of why there is a desire for more touch among some participants. It would be interesting to assess this in terms of qualitative experiences, possibly through a free response task (e.g. journal writing) that provides greater insight into the specific cognitions that underlie people's attitudes towards touch. Also, as research increases on whether or not touch should be used in multiple forms of therapy, the results of this experiment support the notion that negative attitudes about touch are significantly related to depressive symptoms. From a clinical perspective, it would be interesting to examine whether these individuals can learn positive, healthy touch and in turn, whether this strategy can lessen their depressive symptoms. The ability to understand emotional communication from others as conveyed by touch is an essential component of mental health. By therapists taking on the role of translating touch into understandable, safe

messages, they could possibly help people become better adjusted and more emotionally stable. Therapists may be restricted in achieving their therapeutic goals if they are not able to use touch to help these individuals become more comfortable with and knowledgeable about this most basic form of emotional communication. Touch is such a fundamental part of the human experience; it would be valuable to continue research to further determine the mechanisms behind its imperative role.

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APPENDIX A

STUDY QUESTIONNAIRE

Social Touch Questionnaire

Please indicate how characteristic or true each of the following statements is of you.

0 = not at all 1 = slightly 2 = moderately 3 = very 4 = extremely

		0	1	2	3	4
.	I generally like when people express their affection towards me in a physical way.					
2.	I feel uncomfortable when someone I don't know very well hugs me.					
3.	I get nervous when an acquaintance keeps holding my hand after a handshake.					
4.	I generally seek physical contact with others.					
5.	I feel embarrassed if I have to touch someone in order to get their attention.					
6.	I consider myself to be a 'touchy-feely' person.					
7.	It annoys me when someone touches me unexpectedly.					
8.	I'd feel uncomfortable if a professor touched me on the shoulder in public.					
9.	I'd be happy to give a neck/shoulder massage to a friend if they are feeling stressed.					
10.	I feel uncomfortable if I make physical contact with a stranger on the bus or subway.					
11.	I like being caressed in intimate situations.					
12.	As a child, I was often cuddled by family members (e.g. parents, siblings).					
13.	I would rather avoid shaking hands with strangers.					
14.	I greet my close friends with a kiss, cheek-to-cheek.					
15.	I feel comfortable touching people I do not know very well.					

0 = not at all 1 = slightly 2 = moderately 3 = very 4 = extremely

		0	1	2	3	4
16.	I feel disgusted when I see public displays of intimate affection.					
17.	It would make me feel anxious if someone I had just met touched me on the wrist.					
18.	If I had the means, I would get weekly professional massages.					
19.	I hate being tickled.					
20.	I like petting animals.					

Touch Scale

Please indicate how much each of the following statements is similar to you.

		Not at all like me						Very much like me
		1	2	3	4	5	6	7
1.	I usually become sexually aroused when touching my partner.	□	□	□	□	□	□	□
2.	My partner continually complains that I don't touch him or her enough.	□	□	□	□	□	□	□
3.	When I'm not feeling well, I really need to be touched by my partner.	□	□	□	□	□	□	□
4.	Sometimes I wish my partner were more comfortable with being touched by me.	□	□	□	□	□	□	□
5.	Sometimes I am not very happy with the level of touch in my relationship.	□	□	□	□	□	□	□
6.	I like my partner to hold my hand to demonstrate his or her affection for me.	□	□	□	□	□	□	□
7	I like touching and being touched by my partner, especially when others are around to see.	□	□	□	□	□	□	□
8.	Even in private, I can't get my partner to touch me enough.	□	□	□	□	□	□	□
9.	My partner often complains that I don't touch him or her enough.	□	□	□	□	□	□	□
10.	When I'm angry with my partner, I sometimes feel like hitting him or her.	□	□	□	□	□	□	□
11.	It feels very natural for my partner and I to touch each other, even when others are around.	□	□	□	□	□	□	□
12.	After a sexual interaction, I really enjoy being held by my partner.	□	□	□	□	□	□	□
13.	Just being touched by my partner is usually enough to arouse me sexually.	□	□	□	□	□	□	□
14.	When I'm upset with my partner, I still need physical reassurance from him or her.	□	□	□	□	□	□	□

		Not at all like me						Very much like me
		1	2	3	4	5	6	7
15.	I think it is embarrassing when my partner touches me in public.	□	□	□	□	□	□	□
16.	I sometimes wish my partner would touch me more.	□	□	□	□	□	□	□
17.	I use touch as a means to initiate sexual interaction with my partner.	□	□	□	□	□	□	□
18.	When I am facing a difficult situation, I like being touched by my partner.	□	□	□	□	□	□	□
19.	My partner often touches me to assert his or her feelings of control.	□	□	□	□	□	□	□
20.	My partner's touch makes me feel loved.	□	□	□	□	□	□	□
21.	My partner uses touch as a means to initiate sexual closeness with me.	□	□	□	□	□	□	□
22.	Sometimes I find my partner's touch really annoying.	□	□	□	□	□	□	□
23.	When my partner is feeling under the weather, my first reaction is to touch him or her.	□	□	□	□	□	□	□
24.	I usually hug my partner to show how happy I am to see him or her.	□	□	□	□	□	□	□

Childhood Trauma Questionnaire

Using the following scale, please respond to the questions below:

Never true	Rarely true	Sometimes true	Often true	Very often true
1	2	3	4	5

When I was growing up…

1.	I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	1 2 3 4 5
2.	People in my family hit me so hard that it left me with bruises or marks.	1 2 3 4 5
3.	I was punished with a belt, a board, or cord, or some other hard object.	1 2 3 4 5
4.	I believe that I was physically abused.	1 2 3 4 5
5.	I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor.	1 2 3 4 5
6.	Someone tried to touch me in a sexual way, or tried to make me touch them.	1 2 3 4 5
7.	Someone threatened to hurt me or tell lies about me unless I did something sexual to them.	1 2 3 4 5
8.	Someone tried to make me do sexual things or watch sexual things.	1 2 3 4 5
9.	Someone molested me.	1 2 3 4 5
10.	I believe that I was sexually abused.	1 2 3 4 5

Adult Trauma Questionnaire

Using the following scale, please respond to the questions below:

Never true	Rarely true	Sometimes true	Often true	Very often true
1	2	3	4	5

Since becoming an adult, there have been times when…

1.	I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	1 2 3 4 5
2.	People in my family hit me so hard that it left me with bruises or marks.	1 2 3 4 5
3.	I got hit or beaten so badly that it was noticed by someone like a neighbor or doctor.	1 2 3 4 5
4.	Someone tried to touch me in a sexual way, or tried to make me touch them.	1 2 3 4 5
5.	Someone threatened to hurt me or tell lies about me unless I did something sexual to them.	1 2 3 4 5
6.	Someone tried to make me do sexual things or watch sexual things.	1 2 3 4 5
7.	Someone sexually assaulted me.	
8.	I believe that I was sexually abused.	1 2 3 4 5

Center for Epidemiologic Studies Depression Scale (CES-D Scale)

Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week.

1 Rarely or None of the Time (Less than 1 Day)
2 Some or a Little of the Time (1-2 Days)
3 Occasionally or a Moderate Amount of Time (3-4 Days)
4 Most or All of the Time (5-7 Days)

During the past week:

1.	I was bothered by things that usually don't bother me.
2.	I did not feel like eating; my appetite was poor.
3.	I felt that I could not shake off the blues even with help from family or friends.
4.	I felt that I was just as good as other people.
5.	I had trouble keeping my mind on what I was doing.
6.	I felt depressed.
7.	I felt that everything I did was an effort.
8.	I felt hopeful about the future.
9.	I thought my life had been a failure.
10.	I felt fearful.
11.	My sleep was restless.
12.	I was happy.
13.	I talked less than usual.
14.	I felt lonely.
15.	People were unfriendly.
16.	I enjoyed life.
17.	I had crying spells.
18.	I felt sad.
19.	I felt that people dislike me.
20.	I could not get "going."

APPENDIX B

TABLE 1B. FACTOR LOADINGS FOR TOUCH SCALE

AND

TABLE 2B. FACTOR LOADINGS FOR SOCIAL TOUCH QUESTIONNAIRE

Table 1

Factor Loadings for Touch Scale Items

Touch scale items	Factor loadings				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
When my partner is feeling under the weather, my first reaction is to touch him or her.	.843	-	-	-	-
When I am facing a difficult situation, I like being touched by my partner.	.777	-	-	-	-
When I am not feeling well, I really need to be touched by my partner.	.725	-	-	-	-
I usually hug my partner to show how happy I am to see him or her.	.687	-	-	-	-
When I'm upset with my partner, I still need physical reassurance from him or her.	.641	-	-	-	-

My partner's touch makes me feel loved.	.620	-	-	-	-
I like my partner to hold my hand to demonstrate his or her affection for me.	.451	-	-	-	-
After a sexual interaction, I really enjoy being held by my partner.	.416	-	-	-	-
I sometimes wish my partner would touch me more.	-	.804	-	-	-
Even in private, I can't get my partner to touch me enough.	-	.741	-	-	-
Sometimes I wish my partner were more comfortable with being touched by me.	-	.685	-	-	-
Sometimes I am not very happy with the level of touch in my relationship.	-	.672	-	-	-
My partner continually complains that I don't touch him or her enough.	-	-	.839	-	-

My partner often complains that I don't touch him or her enough.	-	-	.837	-	-
Sometimes I find my partner's touch really annoying.	-	-	.622	-	-
My partner often touches me to assert his or her feelings of control.	-	-	.355	-	-
When I'm angry with my partner, I sometimes feel like hitting him or her.	-	-	-	-	-
I usually become sexually aroused when touching my partner.	-	-	-	.934	-
Just being touched by my partner is usually enough to arouse me sexually.	-	-	-	.842	-
I use touch as a means to initiate sexual interaction with my partner.	-	-	-	.442	-
My partner uses touch as a means to initiate sexual closeness	-	-	-	.374	-

with me.					
I like touching and being touched by my partner, especially when others are around to see (reverse-scored).	-	-	-	-	.845
I think it is embarrassing when my partner touches me in public.	-	-	-	-	.508
It feels very natural for my partner and me to touch each other, even when others are around (reverse-scored)	-	-	-	-	.44

Table 2

Factor Loadings for Social Touch Questionnaire Items

Scale items	Factor 1
It annoys me when someone touches me unexpectedly.	.677
I would rather avoid shaking hands with strangers.	.617
It would make me feel anxious if someone I had just met touched me on the wrist.	.603
I feel uncomfortable when someone I don't know very well hugs me.	.596
I feel embarrassed if I have to touch someone in order to get their attention.	.580
I get nervous when an acquaintance keeps holding my hand after a handshake.	.579
I feel uncomfortable if I make physical contact with a stranger on the bus or subway.	.569
I generally like when people express their affection towards me in a physical way.	.561
I consider myself to be a 'touchy-feely' person.	.551
I'd feel uncomfortable if a professor touched me on the shoulder in public	.518
I generally seek physical contact with others.	.436

I'd be happy to give a neck/shoulder massage to a friend if they are feeling stressed.	.388
I feel disgusted when I see public displays of intimate affection.	.345
If I had the means, I would get weekly professional massages.	.345
I like being caressed in intimate situations.	.333
I feel comfortable touching people I do not know very well.	.332
As a child, I was often cuddled by family members (e.g. parents, siblings).	-
I hate being tickled.	-
I like petting animals.	-
I greet my close friends with a kiss, cheek-to-cheek.	-