Repercussions of Sexual and Physical Trauma: The Impact of Lingering Negative Attitudes about Touch

by

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ABSTRACT

Humans are social beings, which means interpersonal relationships are important contributors to our psychological health. Our health and behavior is manifested through a dynamic cycle of interacting factors: environmental, personal, and behavioral. Contributing to this interaction, interpersonal relationships provide benefits such as increased social support and decreased loneliness. The care and attention of relationship partners are communicated in multiple ways, one of which is interpersonal touch. Although touch can communicate positive feelings and support, it can also be used negatively in certain contexts. Unwanted or forced touch occurs when an individual experiences sexual or physical trauma. Experiencing this type of trauma often results in negative psychological consequences. Exactly how sexual or physical trauma—both of which involve unwanted touch—might influence an individual's attitudes towards touch is important to explore. If an individual feels negatively about interpersonal touch due to previous experience of trauma, this might negatively influence the amount of current touch with a partner, and also the survivor's psychological well-being.

In the current study, I proposed that previous occurrence of sexual or physical trauma would predict both decreased frequency of touch in a current intimate relationship and poorer individual well-being, and that these relations would be explained by negative touch attitudes. Results supported these hypotheses, suggesting that lingering negative touch attitudes following trauma could be an underlying mechanism affecting social and individual functioning. As seen in our model, these attitudes fully mediated the effects between previous sexual or physical trauma and individual well-being, as well as frequency of touch. This understanding can help provide further insight into the repercussions of trauma and the underlying mechanisms attributing to continued negative effects.

A special dedication to my parents, Ruth and Ron. From the beginning, they have continued to encourage my education and future aspirations, teaching me the importance of hard-work and dedication. To those friends and family who have supported from the start. Thank you for continuing to motivate and encourage my goals. Finally, thank you to the individuals I have met along this journey. Without your care and support, my successes would not be possible.

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Introduction

Traumatic events comprise the loss of control over behavior, autonomous decisions, or aspects of the environment encounters (Foa, Zinbarg, & Rothbaum, 1992). The consequences of trauma are often detrimental to a survivor. These consequences may include psychological distress, which can negatively influence coping and hinder functioning following the trauma. In 1986, Bandura introduced a theory that helps explain the ability to adapt to stressors, such as traumatic events, and the components involved in what makes us who we are. This ability and its underlying components contribute to our perceived self-efficacy, or the belief we have in our ability to handle adversity (Bandura, 1977).

Trauma can take many forms; some common examples include sexual and physical trauma. Sexual and physical trauma involve the threat of or actual experience of unpredictable, uncontrollable, or unwanted touch. While trauma may involve the use of touch in a negative manner, touch in other contexts is often positive and health promoting. For example, because humans are inherently social, relationships and social interactions are key contributors to mental and physical health. Intimate relationships are an important type of social interaction that we may experience. Within intimate relationships, touch contributes to positive communication, individual well-being, and relationship satisfaction (Jakubiak & Feeney, 2016).

Touch can be involved in both traumatic and beneficial contexts. For those who have experienced a sexual or physical trauma, it is important to understand how the trauma may dynamically affect behavior, personal factors, and environmental factors. It is important to ask what happens to individuals who have experienced trauma involving touch, yet continue to engage in committed intimate relationships. The current study explored how the experience of sexual or physical trauma may affect touch within

intimate relationships, as well as individual well-being, and what underlying mechanisms might hinder the ability to proactively move forward following trauma. Understanding these underlying maladaptive processes could provide further insight into relationships and well-being following sexual or physical trauma.

Social Cognitive Theory and Social Support

Social cognitive theory (SCT) proposes that humans are neither specifically driven by traits, nor solely controlled by the environment. Instead, three components interact in a reciprocal manner (Bandura, 1986). These three dynamic components include personal factors (e.g., cognitive, affective, and biological processes), environmental factors (e.g., relationships, social interactions, or career and educational opportunities), and behavior. The interaction among these components contributes to an individual's *agency*. Human agency refers to the capability of being a proactive contributor to one's own life (Bandura, 2001).

This agentic model suggests that individuals are not simply reactive to their environment. Instead, the three components dynamically work in tandem as individuals adapt to environmental cues and stressors. Thus, environmental factors such as socioeconomics or family dynamics are dynamically involved in the triadic process of how individuals perceive their own agency.

The central mechanism of human agency lies in an individual's perceived self-efficacy (Bandura, 1977). Although other influences may contribute to individuals' adaptive behavior, the belief an individual has in his or her capability to successfully conquer a problem encourages the motivation to tackle such problems. The perception of self-efficacy stems from the combination of the previously mentioned triad of interacting motivators, each of which is equally important in adaption and perceived

self-efficacy. Nevertheless, there are specific cross-cutting factors that are especially influential.

Benight and Bandura (2004), proposed that perceived self-efficacy is highly influenced by the presence of social support. They indicated that social support is a key contributor in the triad, heavily influencing a feeling of capability and optimistic functioning. Their claim that social support dynamically contributes to healthy functioning and adaption to environmental, behavioral, and personal factors continues to be supported with a wealth of studies exploring the benefits of social support.

Social Support and Intimate Relationships

Social support and its effects on health have been studied for decades. Both psychological and physiological systems have been the subject of study. Social support, through access to a social network and social integration, has been shown to benefit psychological and physiological well-being in many specific contexts (Cohen & Wills, 1985; Seeman, 1996; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). With social context playing a role in individuals' well-being, researchers have expanded to studying differing aspects of social support, such as sources of support (e.g. coworker, friend, partner).

One varying aspect of social support includes the nature of the relationship between the giver and receiver. A key example of this is intimate relationships. Similar to the previously mentioned benefits of social support in general, committed intimate relationships have shown benefits for both mental and physical health (Kiecolt-Glaser & Newton, 2001; Slatcher, 2010; Burleson, Roberts, Vincelette, & Guan, 2012).

Touch and Intimate Relationships

Intimate relationships convey a sense of social support that relies on the communication of that support between partners. Communication can include both verbal and nonverbal forms. Research has supported that nonverbal communication

between partners is equally important to verbal communication within intimate relationships (Jakubiak & Feeney, 2016). One important form of nonverbal communication is interpersonal touch (Dunbar, 2010; Field, 2010).

Interpersonal touch occurs in multiple settings, including both sexual and non-sexual interactions. Touch in intimate relationships can communicate both emotions and expressions of care and support between partners (Gottlieb, 1971). When communicating support, touch has been linked to physical and psychological health, as well as relationship satisfaction (Jakubiak & Feeney, 2016; Gulledge, Gulledge, & Stahmann, 2003). These interactions provide the reassurance of social support from partner to partner within an intimate or public setting (Coan, Schaefer, & Davidson, 2006; Muise, Schimmack, & Impett, 2015).

As discussed by Burleson and Davis (2014), touch also may promote resiliency to stress and challenge, for example, by the enhancement of positive affect or social connectedness. For example, in a study by Burleson, Trevathan, & Todd (2007), results supported the benefits of touch between partners in their diary study of middle-aged women. They found that experiencing touch—through either physical affection or sexual interaction—from their partner on one day predicted fewer stressful events and decreased negative mood and/or increased positive mood on the following day.

Touch as a Traumatic Stressor

In discussing the benefits of touch in intimate relationships and social support, it is important to note that these benefits occur in positive contexts. That is to say, these are contexts in which the individual is experiencing stimuli and scenarios that support agency and an individual's perceived self-efficacy. However, there is the possibility that an individual may experience touch in a negative context that may compromise agency.

According to SCT, the fact that a life event is undesirable is not enough to qualify it as a traumatic stressor. Rather, a negative event becomes a traumatic stressor when it threatens perceived self-efficacy due to unpredictable, unpreventable, or uncontrollable characteristics (Benight & Bandura, 2004). Trauma involving touch includes unwanted or forced touch, which can happen through either sexual or other physical contact (American Psychiatric Association, 2013).

Benight and Bandura (2004) suggest that when an individual experiences a traumatic stressor, continued high perceived self-efficacy aids in adopting healthy coping methods and productive management skills. On the other hand, lower perceived self-efficacy due to an influence from any of the three reciprocal components may lead to greater vulnerability to psychological distress and hindered functioning. Lower self-efficacy may lead individuals to react with negative coping strategies including avoidance. This can be manifested through a number of reactions, including avoidance of trauma-related thoughts, feelings, and external reminders. After a traumatic event involving touch, such avoidant reactions may promote negativity towards interacting sexually or physically with other individuals. These negative outlooks might include discomfort, dissatisfaction, or avoidant thoughts and feelings about touch, which have the potential to carry over into intimate relationships.

Although social support has been noted to be beneficial and enhance perceived self-efficacy, sexual or physical trauma is a socially-based traumatic stressor. The social (i.e., environmental) nature of the trauma must be considered when trying to understand a survivor's perception of agency in regards to environment and support. Because of the touch-specific context of the trauma , negative thoughts and feelings involving touch in a social or intimate context can continue to affect personal factors, behavioral patterns, and environmental interactions.

Intimate Relationships and Trauma

After the disruption of a trauma, a survivor will continue to experience ordinary life events. For some, this reintegration to the norm is manageable, showing the ability to maintain self-efficacy with behavior, processing, and environmental factors. However, for others, the initial trauma may continue to affect the survivor's attempts at normalcy. Lingering issues from the trauma can affect any of the three dynamic factors, including social support and intimate relationships. As reviewed by Taft, Watkins, Stafford, & Monson (2011), intimate relationships in which a partner previously experienced a traumatic event often suffer relationship difficulties. While these findings show that intimate relationships may be affected by previous trauma, the majority of current studies investigating these difficulties have been carried out in military populations. To explore the aftereffects of trauma on relationships, studies have focused on context-specific effects. For example, considering the violent nature of much combat-related trauma, Taft, Street, Marshall, Dowdall, & Riggs (2007) explored anger and partner abuse among Vietnam veterans.

Effects on relationships of other kinds of traumatic stressors, such as sexual or physical trauma, have not been explored to the same degree, although there have been some similar findings. For example, in a study by Feinauer, Callahan, & Hilton (1996), the experience of a previous sexual or physical trauma predicted an increase in intimate relationship maladjustment, and a decrease in the individual's own well-being. Intimate relationships can potentially provide essential social support for trauma survivors. Exploring underlying factors related to sexual or physical trauma may provide insight into why intimate relationships and individual well-being potentially suffer.

Current Study

The current study begins to bridge this gap in the literature to explore potential trauma-related effects on attitudes about touch and its expression in intimate relationships, and in turn, how negative or avoidant feelings and thoughts about touch may affect intimate relationships and individual well-being.

Due to research suggesting that touch within intimate relationships can have positive effects on health, I hypothesized that, first, the frequency of touch in an intimate relationship would be positively correlated with an individual's well-being. Second, I hypothesized that reports of more sexual or physical trauma would predict more negative attitudes about touch. Third, I hypothesized that reports of more sexual or physical trauma would predict both lower frequency of touch in a current intimate relationship, and lower reported well-being. Finally, I hypothesized that the relationship between occurrence of sexual or physical trauma and the two outcomes—lower frequency of touch and lower individual well-being—would be fully explained through the individual's negative thoughts and feelings about touch. A partial structural equation model was used to test all of these hypotheses.

Methods

Participants and Procedure

Students from Arizona State University were recruited to complete an online survey. The survey was distributed via SurveyMonkey and the students received course credit for participation. The study was considered exempt by Arizona State University's institutional review board. For the purpose of this study, those who participated were filtered based on certain criteria. The criteria included participants being involved in a committed relationship for at least six months at the time of the survey. Also, preliminary pilot testing of the survey suggested a time of at least thirty minutes to

provide adequate information. Those who did not endorse these criteria were not included.

Participants (N = 438) included both males (21.5%) and females (78.5%). Their ages ranged from 18 to 55 years (M = 24.53, SD = 6.16). With respect to racial identification, a majority of the participants reported Caucasian/White/European American (81.0%); 9.3% reported another not listed or mixed race, 4.0% reported Asian or Asian American, 3.2% reported African or African American, 1.6% reported Native American or Alaskan Native, 0.5% reported Native Hawaiian or Other Pacific Islander, and 0.4% reported Arab or Arab American. Regarding education, 47.7% reported some college education, 43.1% reported having an associate's degree, 8.5% reported having a bachelor's degree, and 0.7% reported some postgraduate work or a postgraduate degree. Examining participants' family financial situations, 10.7% reported not having enough money to meet basic needs, 18.0% reported having barely enough money to meet basic needs, 64.6% reported having enough to meet basic needs, and 6.6% reported having plenty of money to spend freely.

Nearly half (42.9%) indicated never experiencing sexual or physical trauma, while the rest of the participants (57.1%) reported experiencing some form of either childhood or adulthood sexual or physical trauma. With respect to the couples' relationships lengths, 19.6% of the participants had been in a committed relationship for 6 months to 1 year, 23.5% for 1 to 2 years, 17.6% for 2 to 3 years, and 39.3% for more than 3 years.

Measures

All measures included in the study were self-report surveys. Completion of these measures was considered consent to participate. A full list of the questionnaires with items included can be found in Appendix A.

Previous sexual or physical trauma. The Childhood Trauma Questionnaire (Bernstein, et al., 1994) was used to assess the experience of previous sexual or physical trauma. A modified version was also included to address the experience of adulthood sexual or physical trauma using the same questions reworded from childhood to adulthood. The childhood questionnaire included ten items and the adulthood version included eight items. These were Likert-type measures ranging from 1 (*never true*) to 5 (*very often true*). The two scales were combined and averaged to show a value of 1, indicating no experience of trauma, to 5, indicating a high experience of trauma. One item, "I was punished with a belt, a board, or cord, or some other hard object" was excluded. This was due to the potential for generational or cultural differences where this form of reprimand may be considered acceptable. The Cronbach's alpha reliability for the combined scales was = .92.

Negative touch attitudes. Although positive touch attitudes may also be affected by previous sexual or physical trauma, the focus of this study was to explore underlying mechanisms potentially reducing self-efficacy in both individual and social contexts. The detrimental influence of increased negativity about touch is likely to be far greater than the influence of a decrease in positivity about touch. Therefore, the proposed underlying factor continuing to affect an individual following trauma is specifically lingering negative attitudes about touch.

Three measures were included to assess the negative thoughts and feelings a participant might have about touch in both social and intimate contexts (see Appendix A). Two of the measures were subscales taken from the Touch Scale (Brennan, Wu, & Loev, 1998), and the third was the Social Touch Questionnaire (Wilhelm, Kochar, Roth, & Gross, 2001). These three specific scales were included to encompass multiple contexts of negative touch attitudes.

The Touch Scale (Brennan et al., 1998) examines attitudes about giving and receiving intimate touch. Its design includes a number of subscales that explore the respondents' attitudes towards both positive and negative touch. The original subscales assesses components of touch dependent on context. These subscales measured touch for affection, sexual touch, safe haven touch, discomfort with public touch, touch avoidance, coercive touch, and dissatisfaction with current touch. We included two subscales that focused on negative attitudes towards touch in an intimate relationship. These include dissatisfaction with current touch and avoidance of touch. Based on an exploratory factor analysis on our sample, I discarded two items that loaded very poorly on these factors..

Items were scored on a Likert-type scale from 1 to 7 with 1 (*not at all like me*) to 7 (*very much like me*). Examples of items specific to the two subscales include "Sometimes I find my partner's touch annoying" or "I sometimes wish my partner would touch me more." The items for each subscale were averaged, with dissatisfaction having a Cronbach's reliability of .78 and avoidance having a Cronbach's reliability of .83.

The Social Touch Questionnaire (Wilhelm et al., 2001) includes items that assess attitudes about touch in a number of social contexts. These include a range of types of interpersonal relationships such as strangers, acquaintances, and family members, and include both public and private scenarios. Examples of these items include, "I would rather avoid shaking hands with strangers" and "I feel uncomfortable when someone I don't know very well hugs me." Participants rated the extent to which their own behaviors or feelings aligned with each item, using a Likert-type scale with 0 (*not at all*) to 4 (*extremely*). Based on exploratory factor analysis in the current sample, four items were excluded due to low factor loadings. Once these items were removed, the remaining

items were combined for an average score where higher scores indicate a greater discomfort with interpersonal touch. The Cronbach's reliability was .85.

Individual well-being. Six measures were included to assess individual well-being. Of these six measures, the four assessing perceived stress, depressive symptoms, loneliness, and anxiety, were reverse-coded for higher values to indicate positive well-being.

Perceived stress. To measure perceived stress, I included the Perceived Stress Scale (PSS; Cohen & Williamson, 1988). The PSS is a 10-item scale that evaluates an individual's perception of stress within the last month. Its items include a Likert-type scale assessing how often an individual felt stress or the inability to cope with life stressors with 0 (*never*) and 4 (*very often*). Examples of these items include "In the past month, how often have you felt confident in the ability to handle your personal problems?" The items were averaged and had a Cronbach's reliability of .87.

Depressive symptoms. To asses an individual's perceived depressive symptoms, the Center for Epidemiological Depression Scale (CESD; Radloff, 1977), was included. The CESD includes a 20 item self-report scale that asses the respondent's frequency of feelings and characteristics of depression within the past week. Respondents answers ranged from 1 (*rarely, less than one day*) to 4 (*most of the time, 5 to 7 days).* Items that also addressed loneliness were excluded to reduce spurious correlation with the UCLA-R. The remaining items were then averaged, with a Cronbach's reliability of .91.

Loneliness. To measure loneliness, I included the UCLA Loneliness Scale (UCLA-R, Version 3). This scale includes items that assess feelings of loneliness without using terms such as "lonely" or "loneliness". This is assessed through a Likert-type scale with respondents indicating 1 (*never*) to 4 (*always*). The scale maintains high internal

consistency, test retest reliability, and concurrent validity despite the lack outright items (Russell, 1996). Our sample continued this trend with a high Cronbach's reliability of .93.

Anxiety. I included the six-item short form of the state anxiety subscale from the State-Trait Anxiety Inventory (Marteau & Bekker, 1992) to assess the respondents' general feelings of anxiety. Participants were asked to rate how strongly they *usually* feel a certain way. This was indicated with a range of 1 (*not at all*) to 4 (*very strongly*). With these six items averaged, the Cronbach's reliability was .86.

Interpersonal support. To assess perception of available interpersonal support, the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983) was included. Respondents indicated their believed amount of social support from a number of different sources and contexts. Our scale included a shortened version of the original 40 items, to 12 items. These were indicated with a Likert-type scale of 0 (*definitely false*), to 4 (*definitely true)*. Similar to the original, our items included both positive and negative items to counterbalance responses, with a Cronbach's reliability of .84.

Perceived control. The Pearlin Mastery Scale (Pearlin & Schooler, 1978) was included to measure the perceived control a respondent feels they have over their own life and future. This scale includes 7 items with necessary items being reversed, so a higher averaged score indicates a greater feeling of control. This was Likert-type with 1 (*strongly disagree*) to 4 (*strongly agree*). Our sample produced a Cronbach's reliability of .81.

Frequency of current intimate touch. Frequency of touch in a current intimate relationship was measured via the Physical Affection Scale (Diamond, personal communication, 2007). This scale assessed the amount of touch that is exchanged between partners in an intimate relationship. Examples of items include "How often

have you kissed?" or "How often have you hugged?" The items were measured with a Likert-type scale of 1 (*never or very seldom*) to 5 (*almost daily*). The five included items were both sexual and non-sexual in nature and were averaged to create a score of higher numbers indicating higher frequency of touch with a Cronbach's reliability of .88.

Model Specification and Data Analysis

To determine the best method of handling missing data, I used SPSS version 25 to run preliminary analyses determining the percentage and spread of missing data. Listwise deletion was selected, with 13.58% excluded due to missing one or more of the included measures. According to Bentler (2006), the remaining sample of 438 satisfies the criterion of at least 10 participants for every parameter to be estimated.

To test the mediational model proposed in Figure 1, I used structural equation modeling (SEM; EQS 6.1, Bentler, 2006). SEM allows us to test all components of the mediational model simultaneously while also modeling measurement error. Preliminary examination of the data revealed that all of the assumptions of linear regression and SEM (e.g., linearity, multivariate normality, random residuals) were met in the current dataset. Examination of the bivariate correlation matrix did not reveal any problems with multicollinearity (see Table 1). Maximum likelihood (ML) estimation was used, as the multivariate normality assumption was not violated.

Table 1. Bivariate Correlation Matrix of Variables Included in Structural Equation Analysis (N = 438)

	1	2	3	4	5	6	7	8	9	10
1. Sexual or Physical Trauma										
2. Frequency of Touch	-0.11*									
3. Social Touch Discomfort	0.11*	-0.08								
4. Dissatisfaction with Touch	0.10*	-0.34**	-0.04							
5. Avoidance with Touch	0.15**	-0.23**	0.23**	-0.17**						
6. Percieved Stress	-0.08	0.14**	-0.23**	-0.16**	-0.21**					
7. Interpersonal Support	-0.14**	0.24**	-0.29**	-0.24**	-0.23**	0.35**				
8. Depression	-0.22**	0.18**	-0.27**	-0.22**	-0.27**	0.67**	0.44**			
9. Loneliness	-0.16**	0.17**	-0.41**	-0.25**	-0.26**	0.50**	0.65**	0.60**		
10. Anxiety	-0.14**	0.23**	-0.28**	-0.19**	-0.23**	0.63**	0.38**	0.64**	0.55**	
11. Mastery	-0.22**	0.16**	-0.26**	-0.25**	-0.28**	0.45**	0.38**	0.54**	0.49**	0.42**

* $p < .05$.
** $p < .01$.
*** $p < .001$.

A partial structural model was used to assess the proposed function of negative attitudes about touch as a mediator of the relations between self-reported level of sexual of physical trauma and both frequency of touch between partners and individual well-being. As seen in the hypothesized model (Figure 1), the measurement component is depicted through thin lines, while the structural component is seen through thick lines. All measurement model identification rules were satisfied. In accordance with these rules, one pathway was chosen to be fixed at 1.0 for each of the two latent variables. Avoidance of touch was chosen for negative touch attitudes and perceived stress was chosen for individual well-being. Structural identification rules were also satisfied based on the initial model, prior to modification, having 66 known parameters and 31 unknown parameters.

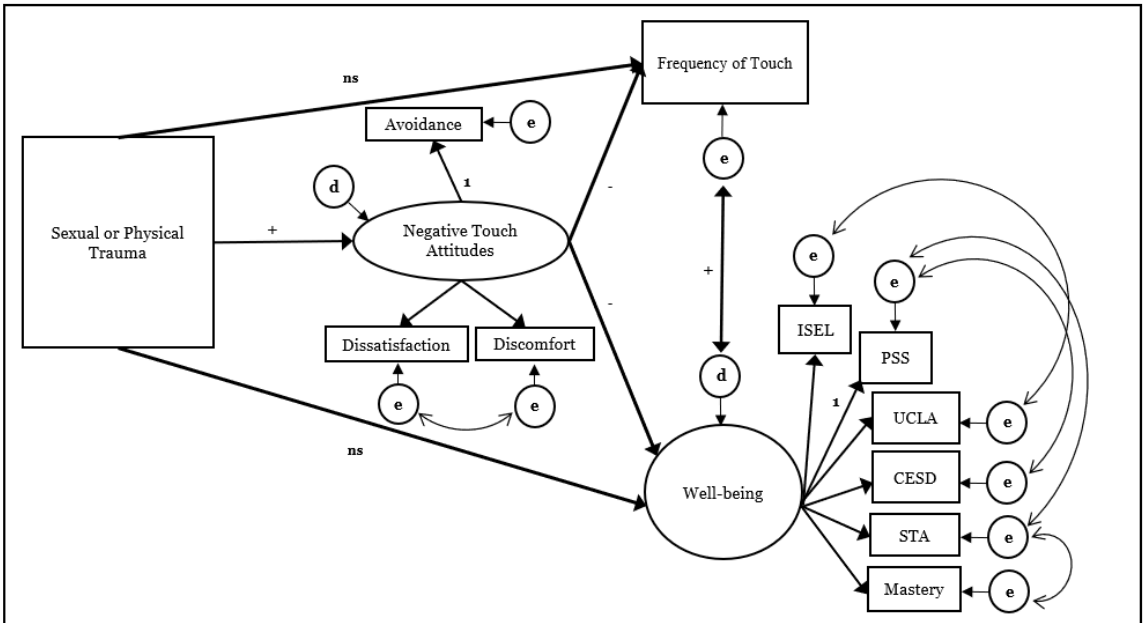

FIGURE 1. Hypothesized structural model. Boldfaced arrows indicate structural component. In accordance with measurement identification, one indicator on each latent is fixed and is indicated by 1. e = error and d = disturbance. A two-step approach was used, first examining measurement model identification and fit, and second, examining the final structural model. Thin double-headed arrows indicate the error terms allowed to correlate, suggested by the LaGrange Multiplier Test following the initial measurement model.

Although the initial model appeared to be a good fit to the data (Table 2), both the Wald and LaGrange Multiplier tests were completed to check for theoretically appropriate post-hoc additions or removals, as well as to assess the hypothesis of non-significant direct effects. The only suggested change that followed both theory and SEM identification criteria was the removal of the two direct pathways between the exogenous variable of previous sexual or physical trauma and the two outcomes of frequency of touch and individual well-being. Standardized coefficient results and significance levels for the initial hypothesized structural model are depicted in Figure 2. EQS does not provide specific significance values, however all indicated standardized coefficients are significant at p <.05.

Table 2. Fit Indices of Partial Structural Initial and Modified Models

Fit Index	Initial	Modified
χ^2	88.41	89.06
df	35	37
RMSEA	0.06	0.06
CFI	0.97	0.97
RMR	0.03	0.03

Note. χ2 change nonsignifcant between models

Figure 3 depicts the modified structural model including the dropped pathways, standardized coefficients, and significance levels. In comparing fit indices (χ^2 = 89.06, p < .001, CFI = 0.97, RMSEA = 0.06), statistically the modification did not significantly improve from the original model. Therefore, the following results will be based on our original structural model (Figure 2). For full comparison of indices, refer to Table 2.

Results

As predicted, the two outcomes of frequency of touch and individual well-being were moderately correlated (see Figure 2). Contrary to our initial hypothesis, however, they were negatively, rather than positively, correlated.

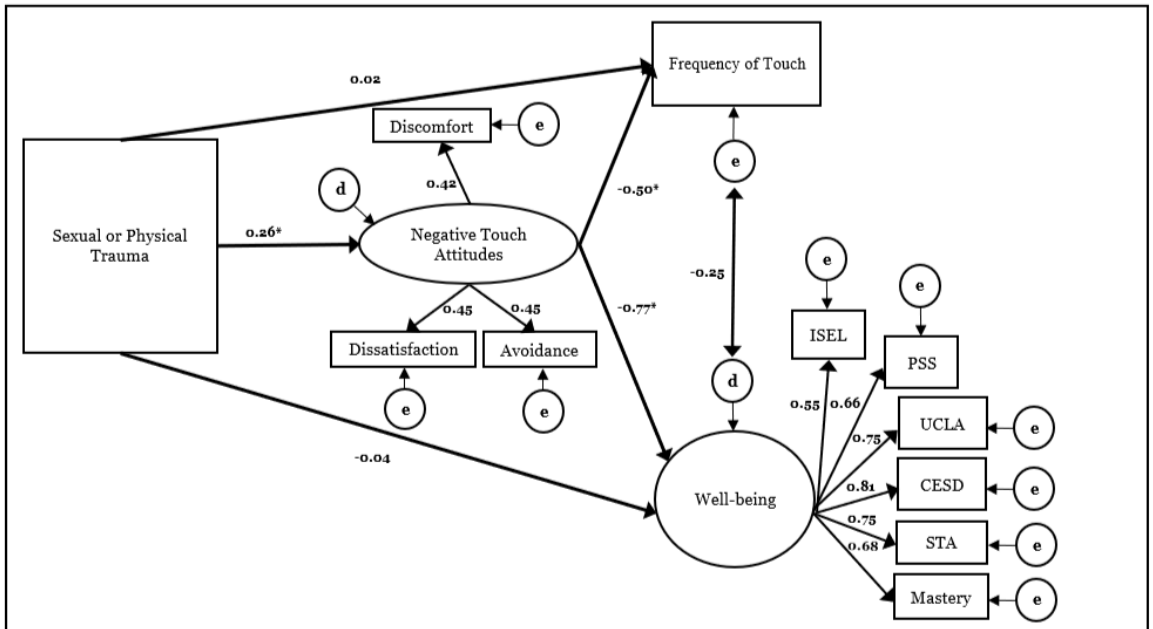

FIGURE 2. Results for structural equation model with standardized coefficients. * $p < .05$. e = error and d = disturbance with fixed factors on latent variables and correlated error terms remaining the same as Figure 1.

In addition, the direct pathways included in the model all proved to be significant at $p < .05$, except for the direct effects between our independent variable and two outcomes. This was expected with the inclusion of the mediator, and was further examined through the indirect effects.

The indirect effect from previous sexual or physical trauma, via the mediator of negative touch attitudes, to frequency of touch in an intimate relationship, was uniquely significant at $p < .05$. Similarly, the indirect effect from previous sexual or physical trauma, via the mediator of negative touch attitudes to individual well-being, was also uniquely significant at $p < .05$.

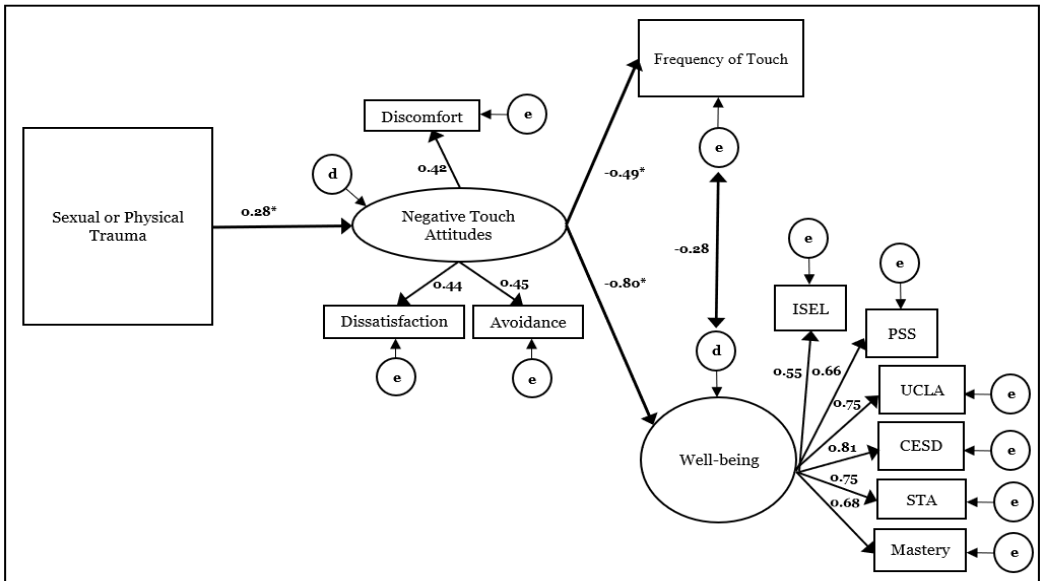

FIGURE 3. Results for modified structural equation model with standardized coefficients. * $p < .05$. e = error and d = disturbance with fixed factors on latent variables remaining the same as Figure 1.

As these data are cross-sectional, no causal effects can be claimed and the results should be interpreted with caution. However, the findings suggest a relationship between previous sexual or physical trauma and lingering negative touch attitudes potentially affecting current frequency of touch in an intimate relationship and individual well-being.

Discussion

Consequences of a traumatic event may affect a number of aspects of an individual's life, including well-being and social interactions. The dynamic interaction among environmental factors, internal factors, and behavior drives our ability to adapt to these stressors (Benight & Bandura, 2004). However, these components are vulnerable following trauma, which may create rifts in the agentic process. If the process is affected, the decrease or loss of ability to adapt creates a barrier to trauma recovery. While not all traumatic events result in traumatic stress or decreased self-efficacy, it is important to

understand potential underlying mechanisms for those who continue to be negatively affected by traumatic events.

Negative attitudes about touch following a trauma involving touch, such as sexual or physical, was believed to be an underlying factor influencing the dynamic components involved in self-efficacy (Bandura, 1977; Bandura, 1986). I proposed that negative attitudes about touch would mediate the relationships between the experience of a previous sexual or physical trauma and both a decrease in the individual's personal well-being and a lower frequency of touch in their current intimate relationship. Although the correlation between touch frequency and well-being was negative, rather than positive as predicted, all other aspects of the hypotheses were fully supported as seen in our SEM results.

Relationship between Individual Well-being and Frequency of Touch

The correlation value showed a moderate relationship between the two outcomes of individual well-being and frequency of touch. However, the hypothesized direction for this relationship was positive, while the results showed a negative value. While this was unexpected, I suggest a possible explanation for these results.

In a structural equation model, all parts of the model are considered simultaneously in the analyses. This provides a comprehensive understanding of potential overlap, variance, and relationships among all variables. The proposed model suggested that lingering negative touch attitudes mediate the relationships between previous trauma and frequency of touch and between previous trauma and individual well-being. In a healthy individual who does not have negative attitudes towards touch, previous research suggests that higher frequency of touch in one's intimate relationship would be linked with greater individual well-being (Jakubiak & Feeney, 2016). However, for those individuals who have negative attitudes towards touch, experiencing more

touch might not have the same effect. If an individual is uncomfortable or avoidant of touch, an increase in touch frequency may decrease well-being. Experiencing touch in that context could lead to stress, anxiety, or feelings of being out of control. For this reason, with our significant findings of negative attitudes as a mediator, a negative correlation between frequency of touch and individual well-being is not completely unreasonable.

Trauma, Negative Touch Attitudes, Frequency of Touch, and Well-being.

The proposed hypotheses that negative touch attitudes mediate both the relationship between level of past sexual or physical trauma and frequency of touch, and the relationship between level of past sexual or physical trauma and individual well-being were supported. As indicated in Figure 2, greater experience of sexual or physical trauma predicted stronger negative attitudes about touch, which in turn predicted both lower frequency of current touch and poorer individual well-being. On the other hand, the direct effects from previous trauma to frequency of current touch and individual well-being were both non-significant. Further suggesting full mediation, the indirect effects to both of the outcome variables were significant at $p < .05$. Fit indices of the initial and modified models suggested strong fit for the data, however there was no significant change from the initial model to the modified model. These findings support the hypothesized mediating relationship of negative touch attitudes, and suggest the potential for these lingering attitudes following a sexual or physical trauma to influence certain aspects of life.

Following a trauma, positive connections with a partner such as intimate touch, and individual well-being are key components for the survivors' happiness, health, and basic functioning. It is important to understand this at both an internal level of individual well-being, as well as a social context for those who engage in a committed

intimate relationship following trauma. For those who have experienced a previous sexual or physical trauma and consequently have negative attitudes about touch, individual well-being and intimate relationships may suffer.

Limitations and Future Directions

While the results from this study are encouraging, there are limitations. The sample used was a college population, which may limit the generalizability to the general population. Also, all of the data were derived from self-report surveys, which risks response bias from the participants. Future data collection using clinical assessment rather than self-report by survey could potentially eliminate this bias, especially regarding items such as previous trauma and mental health components such as depression. Further, these data were cross-sectional. A longitudinal approach would provide more insight into the causal relationship between negative touch attitudes and both individual well-being and frequency of touch.

The current study suggests a number of promising directions and considerations for future research. For future data collection, including additional variables could expand on these findings. For example, specific information regarding the timeline of when the trauma occurred, as well as any previous failed relationships between the time of the trauma and the current committed relationship that potentially could also affect touch attitudes, would give insight into potential covarying or related factors. Also, the addition of a measure to assess relationship satisfaction for the current intimate relationship to supplement the inclusion of frequency of touch could provide a deeper exploration of the influence on intimate relationships.

Finally, exploring how a survivor might maintain, or relinquish, negative attitudes about touch following a touch-related trauma is important for translating this research to clinical settings. An example of this might include disclosure reaction from

an intimate partner. Disclosure reaction refers to the way another individual reacts to a survivor of trauma revealing their experience. For instance, if a partner is supportive and understanding, recovery and coping may be easier. Another component to explore might be whether the survivor's current intimate partner was involved in the traumatic experience. Exploring differences in those who are still involved with the source of the trauma, versus those who are moving forward to new intimate relationships, can provide another level of understanding recovery.

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APPENDIX A

STUDY QUESTIONNAIRES

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

Please indicate how often you engage in each of the following behaviors with your spouse or romantic partner. If you are not married or in a romantic relationship, you may skip to the next page.

	Never	Less than once a month	One to three times a month	One to three times a week	Almost daily
1. Hugging each other	□	□	□	□	□
2. Touching or patting each other, anywhere on the body	□	□	□	□	□
3. Holding hands or having arms around one another's shoulders	□	□	□	□	□
4. Adjusting each other's clothes, hair, or appearance	□	□	□	□	□
5. Cuddling with each other on a couch or bed	□	□	□	□	□
6. Giving each other neck or back massages or similar warm touches	□	□	□	□	□
7. Kissing	□	□	□	□	□
8. Having sexual contact with each other	□	□	□	□	□

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."

Perceived Stress Scale- 10 Item

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

3. In the last month, how often have you felt nervous and "stressed"?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

5. In the last month, how often have you felt that things were going your way?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

7. In the last month, how often have you been able to control irritations in your life?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

8. In the last month, how often have you felt that you were on top of things?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

9. In the last month, how often have you been angered because of things that were outside of your control?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

10. In the last month, how often have you felt difficulties wer piling up so high that you could not overcome them?

___0=never ___1=almost never ___2=sometimes ___3=fairly often ___4=very often

UCLA Loneliness Scale v.3

Instructions: The following statements describe how people sometimes feel. For each statement, please fill in the circle indicating how often you feel the way described.

1=Never

2=Rarely

3=Sometimes

4=Always

1. How often do you feel that you are "in tune" with the people around you?
2. How often do you feel that you lack companionship?
3. How often do you feel that there is no one you can turn to?
4. How often do you feel alone?
5. How often do you feel part of a group of friends?
6. How often do you feel that you have a lot in common with the people around you?
7. How often do you feel that you are no longer close to anyone?
8. How often do you feel that your interests and ideas are not shared by those around you?
9. How often do you feel outgoing and friendly?
10. How often do you feel close to people?
11. How often do you feel left out?
12. How often do you feel that your relationships with others are not meaningful?
13. How often do you feel that no one really knows you well?
14. How often do you feel isolated from others?
15. How often do you feel you can find companionship when you want it?
16. How often do you feel that there are people who really understand you?
17. How often do you feel shy?
18. How often do you feel that people are around you but not with you?
19. How often do you feel that there are people you can talk to?

20. How often do you feel that there are people you can turn to?

Anxiety (Spielberger Trait) SA Survey

I will read a number of statements which people have used to describe themselves. Indicate on the scale how you FEEL RIGHT NOW, that is at THIS MOMENT. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings the best

1 = Not at all

2 = Somewhat

3 = Moderately

4 = Very much

1	2	3	4	
___	___	___	___	1. I feel calm
___	___	___	___	2. I am tense
___	___	___	___	3. I feel upset
___	___	___	___	4. I am relaxed
___	___	___	___	5. I feel content
___	___	___	___	6. I am worried

Interpersonal Support Evaluation List (12-item)

Instructions: This scale is made up of a list of statements each of which may or may not be true about you. For each statement circle "definitely true" if you are sure it is true about you and "probably true" if you think it is true but are not absolutely certain. Similarly, you should circle "definitely false" if you are sure the statement is false and "probably false" if you think it is false but are not absolutely certain.

1. If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me.
   a) definitely false b) probably false c) probably true d) definitely true
2. I feel that there is no one I can share my most private worries and fears with.
   a) definitely false b) probably false c) probably true d) definitely true
3. If I were sick, I could easily find someone to help me with my daily chores.
   a) definitely false b) probably false c) probably true d) definitely true
4. There is someone I can turn to for advice about handling problems with my family.
   a) definitely false b) probably false c) probably true d) definitely true
5. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.
   a) definitely false b) probably false c) probably true d) definitely true
6. When I need suggestions on how to deal with a personal problem, I know someone I can turn to.
   a) definitely false b) probably false c) probably true d) definitely true
7. I don't often get invited to do things with others.
   a) definitely false b) probably false c) probably true d) definitely true
8. If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).
   a) definitely false b) probably false c) probably true d) definitely true
9. If I wanted to have lunch with someone, I could easily find someone to join me.
   a) definitely false b) probably false c) probably true d) definitely true
10. If I was stranded 10 miles from home, there is someone I could call who could come and get me.
    a) definitely false b) probably false c) probably true d) definitely true
11. If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.
    a) definitely false b) probably false c) probably true d) definitely true
12. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.
    a) definitely false b) probably false c) probably true d) definitely true

MASTERY

How strongly do you agree or disagree that:

(1) Strongly Disagree (2) Disagree (3) Agree (4) Strongly Agree

(1) I have little control over the things that happen to me

(2) There is really no way I can solve some of the problems I have

(3) There is little I can do to change many of the important things in my life

(4)I often feel helpless in dealing with the problems of life

(5) Sometimes I feel that I'm being pushed around in life

(6) What happens to me in the future mostly depends on me

(7) I can do just about anything I really set my mind to do