Peritraumatic dissociation and experiential avoidance as predictors of posttraumatic stress symptomatology

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Received 30 October 2003; received in revised form 30 March 2004; accepted 7 April 2004

Abstract

This study examined whether peritraumatic dissociation serves as a proxy risk factor for experiential avoidance in its relationship with posttraumatic stress disorder (PTSD) symptomatology. One hundred eighty-five trauma survivors completed measures that assessed for peritraumatic dissociation, experiential avoidance, and PTSD symptom severity. The results indicated that peritraumatic dissociation and experiential avoidance were significantly related to PTSD symptomatology at baseline. However, after initial levels of PTSD symptomatology were taken into account, only experiential avoidance was related to PTSD symptoms both 4- and 8-weeks later. These results indicate that peritraumatic dissociation is not a proxy risk factor for experiential avoidance and contributes to the growing body of literature indicating that experiential avoidance is an important factor related to the psychological symptoms experienced by trauma survivors.

Keywords: Trauma; Posttraumatic stress; Dissociation; Avoidance

1. Introduction

Previous research has noted a relationship between trauma and dissociative behavior (e.g., Bremner et al., 1992; Cardena & Spiegel, 1993; Chu & Dill, 1990; Dancu, Riggs, Hearst-Ikeda, etc.).

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One important aspect of the dissociative response to trauma is the dissociation that occurs during the traumatic event, referred to as peritraumatic dissociation. Peritraumatic dissociation has received much attention in recent years because it has been shown to be a significant risk factor for the development of posttraumatic stress disorder (PTSD) and other psychological symptomatology following exposure to trauma (Birmes et al., 2003; Bremner et al., 1992; Koopman, Classen, & Spiegel, 1994; Marmar et al., 1994; Ozer, Best, Lipsey, & Weiss, 2003; Shalev, Peri, Canetti, & Schreiber, 1996). Although peritraumatic dissociation has been identified as a risk factor for PTSD, the mechanism through which this dissociation might make one susceptible to PTSD is not well understood.

Some researchers have suggested that the relationship between peritraumatic dissociation and PTSD may be mediated by high levels of anxiety experienced during the trauma (Krystal, Woods, Hill, & Charney, 1991; Marmar, Weiss, & Metzler, 1997; Moleman, van der Hart, & van der Kolk, 1992; Southwick et al., 1993). This hypothesis was tested by Gershuny, Cloitre, and Otto (2003) who examined the hypothesis that the relationship between peritraumatic dissociation and PTSD symptoms was mediated by fears of death and loss of control. Using a sample of undergraduate females with a trauma history, results showed that the proposed mediators did, in fact, account for the relationship between peritraumatic dissociation and PTSD severity. However, given the cross-sectional nature of the investigation, an alternate model specifying a different relationship among the variables is plausible; that is, peritraumatic dissociation may mediate the relationship between fears of death and losing control and posttraumatic stress.

In another investigation, Marshall and Schell (2002) prospectively examined the relationship between peritraumatic dissociation and PTSD symptom severity. Using a cross-lagged panel analysis of longitudinal data collected from survivors of community violence, the investigators showed that peritraumatic dissociation was significantly correlated with PTSD symptoms at both 3- and 12-month follow-up interviews. Although the investigators did not specifically investigate anxiety as a mediator of the relationship between peritraumatic dissociation and PTSD, they did find that baseline peritraumatic dissociation did not predict subsequent PTSD symptom severity after controlling for baseline PTSD symptom severity.

Taken together, these findings suggest that the nature of the relationship between peritraumatic dissociation and PTSD is still unclear. In an attempt to further elucidate the relationship between peritraumatic dissociation and PTSD, some investigators have proposed that dissociative behavior is a form of experiential avoidance (e.g., Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Polusny & Follette, 1995). Experiential avoidance is defined as the unwillingness to remain in contact with aversive private experiences (i.e., bodily sensations, emotions, thoughts, memories, behavioral predispositions), as well as the steps taken to alter the form or frequency of those events and the contexts that occasion them. In line with this formulation, Wagner and Linehan (1998) suggested that the principle function of peritraumatic dissociation is to regulate particular aspects of the trauma (e.g., aversive stimuli and affect) as it is occurring in an attempt to cope with the experience. Others have also suggested that dissociative behavior serves to avoid unwanted emotions, thoughts, and memories (Foà & Hearst-Ikeda, 1996; Foà & Riggs, 1993; Horowitz, 1986; van der Kolk et al., 1996).

Investigators have suggested that such attempts to avoid unwanted emotions, thoughts, memories, and sensations may initially decrease the frequency and severity of such private events.
Ultimately, however, the avoidance attempts result in increases in these same private experiences (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Hayes, Wilson, & Strosahl, 1999; Polusny & Follette, 1995). This position is consistent with the finding that attempts to control internal events often lead to increases in the internal events that one is attempting to control (Cioffi & Holloway, 1993; Clark, Ball, & Pape, 1991; Gold & Wegner, 1995; Hayes, Wilson, Gifford, Follette, 1996; Kelly & Kahn, 1994; Muris, Merckelback, van den Hout, & de Jong, 1992; Salkovskis & Campbell, 1994; Wegner, 1994; Wegner & Zanakos, 1994; Wenzlaff & Wegner, 2000), which further results in perpetual and futile attempts to control these internal experiences. Importantly, attempts to distance oneself from unwanted private experiences appear to result in psychological and behavioral difficulties (e.g., substance use, anxiety, depression, suicidal behavior, risk-taking, aggressive behaviors; Hayes, 1987; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996, Marx & Sloan, 2002). In other words, psychological and behavioral difficulties are the manifestation of attempts to control, avoid, and/or suppress aversive private events. In this framework then, the PTSD symptomatology (i.e., re-experiencing, avoidance and emotional numbing, and hyperarousal) suffered by some trauma survivors may be the by-product of the experiential avoidance process.

Researchers have tested the hypothesis that individuals with trauma histories engage in experiential avoidance and that such avoidance is related to psychological symptomatology. For instance, Marx and Sloan (2002) hypothesized that experiential avoidance and emotional expressivity would mediate the relationship between a history of childhood sexual abuse (CSA) and psychological distress. To test this hypothesis, college undergraduates completed measures that assessed for a CSA history, experiential avoidance, emotional expressivity, and psychological functioning. The findings indicated that CSA status, experiential avoidance and emotional expressivity were significantly related to psychological distress. However, only experiential avoidance mediated the relationship between CSA status and distress. These findings are consistent with those reported by Batten, Follette, and Aban (2001) who also showed that CSA survivors engage in experiential avoidance as well as with the results of a study conducted by Tull and Roemer (2003) who, using a sample of female sexual assault survivors, found that experiential avoidance accounted for a significant portion of the variance in PTSD symptomatology. Overall, these studies contribute to the growing body of literature indicating that experiential avoidance has an influential role in the development and maintenance of psychological symptoms among trauma survivors.

The implication of this previous theoretical and empirical work is that peritraumatic dissociation may only have a relationship with PTSD symptomatology as a result of its relationship with experiential avoidance. Indeed, other investigators have noted the relationship between dissociative responses during the trauma and more pervasive avoidance coping styles (Marmar, Weiss, Metzler, & Delucchi, 1996; Marmar et al., 1996). As such, peritraumatic dissociation may, in fact, be a proxy risk factor for experiential avoidance. Previously, Kraemer, Stice, Kazdin, Offord, and Kupfer (2001) defined a proxy risk factor as a variable that is highly correlated with a given outcome only through its relationship with another variable that is strongly correlated with that outcome. To date, however, there has been no investigation of the relationships among PTSD symptom severity, peritraumatic dissociation, and experiential avoidance.

The present study examined the notion that peritraumatic dissociation serves as a proxy risk factor for experiential avoidance in its relationship to PTSD symptomatology. In order to
demonstrate that peritraumatic dissociation is a proxy risk factor for experiential avoidance in its relationship to PTSD symptomatology, the ability of peritraumatic dissociation to predict PTSD symptomatology levels should diminish when experiential avoidance is taken into account. Additionally, in an attempt to better determine the nature of the relationships among peritraumatic dissociation, experiential avoidance, and PTSD severity, we used a prospective research design with follow-up assessments occurring both 4 and 8 weeks after initial assessment, while controlling for baseline levels of PTSD severity. We chose a prospective design for this investigation because it allowed us to examine the nature of the relationships among PTSD symptoms, peritraumatic dissociation, and experiential avoidance over time, while accounting for baseline PTSD symptom severity. We hypothesized that, at initial assessment, peritraumatic dissociation would serve as a proxy risk factor for experiential avoidance in its relationship with PTSD symptom severity. We also hypothesized that experiential avoidance would continue to predict PTSD symptom severity at both follow-up assessments, even after accounting for baseline levels of PTSD symptomatology.

2. Method

2.1. Recruitment and retention

Participants were drawn from an Introductory Psychology course at a large, urban university. Individuals who reported that they had experienced one or more traumatic stressor(s) were considered potential participants for the study. For the purpose of being consistent with the diagnostic criteria for PTSD (American Psychiatric Association, 2000), a traumatic stressor was defined in this study as a direct personal experience that involved actual or threatened death or serious injury or other threat to one’s physical integrity; or witnessing an event that involved death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate (e.g., serious accident, sexual assault, physical assault, life-threatening illness). In addition, the person’s response to the event must have involved intense fear, helplessness, or horror. The Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1996), which includes a checklist of potentially traumatic experiences, was included as part of a larger packet of questionnaires completed by students at the beginning of the Fall and Spring semesters in exchange for course credit.

Approximately 1659 individuals were given the screener questionnaire packet. Of these participants, approximately 75% returned the packet. Consistent with the literature (e.g., Segal & Figley, 1988; Hojat, Gonnella, & Erdmann, 2003), 75% (n = 933, 71% female) of the participants who completed the packet reported experiencing an event that meets DSM-IV criteria of a traumatic stressor. Potential participants identified through the screener questionnaire packet were then contacted and asked to volunteer for a study in which they would complete several questionnaires about their life experiences. As a result of time constraints, however, all potential participants could not be contacted. In total, 222 of the potential participants were contacted and asked to participate in the study. Individuals who were contacted were informed that the study involved multiple sessions and that they could choose either financial compensation ($10 per
session) or course research credit in exchange for their participation. Of the 222 individuals contacted, 29 stated that they did not need the research credits and/or did not have the time and, thus, declined to participate. This left 193 individuals who met the inclusionary criteria and agreed to participate in the study. All participants entered the study within 2 weeks of completing the screener questionnaire packet (participants completed the packet in the second week of the Fall or Spring semester). Eight participants completed all measures at baseline (time 1) but failed to return for the follow-up assessments. These participants did not significantly differ from the other participants who completed the study on outcome measures completed at baseline or demographic characteristics. The remaining 185 participants completed all baseline measures and returned for the 4-week (time 2) follow-up assessment (96% retention rate). An analysis of group differences in demographic characteristics and responses to stressors between the original individuals contacted ($N = 222$) and the final sample ($N = 185$) revealed that participants in the final sample reported significantly greater PTSD symptomatology, $F(1, 215) = 17.31, p < .001$ and greater peritraumatic dissociative symptoms, $F(1, 219) = 12.01, p < .001$. Due to limited financial resources, a smaller, randomly selected group of 70 participants were asked to return another 4 weeks later to complete the measures again (time 3, 8-week assessment). Analyses revealed no significant group differences in descriptive characteristics and responses to stressors between these individuals and the rest of the sample.

2.2. Measures

The Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1996) is a 49-item, self-report questionnaire assessing the presence and severity of posttraumatic stress disorder symptoms, according to the DSM-IV criteria (American Psychological Association, 2000). This measure was chosen over other PTSD measures because it yields both diagnostic information as well as a PTSD symptom severity index (Foa, Cashman, Jaycox, & Perry, 1997). The PDS includes a checklist of objectively defined events that are potentially traumatic and asks individuals to endorse all events that they have experienced. Individuals are then asked to choose and briefly describe the one event, out of all those endorsed, which causes them the most distress (Foa, 1996). Respondents then report on PTSD symptoms relating to their index event that they have experienced within the last month, with higher scores indicating greater symptom severity and functional impairment. Items are rated with regard to presence (i.e., yes or no) and symptom severity. Symptom severity scores are calculated by summing responses to the items, with a possible range of 0 to 51. Severity scores below 10 are considered mild, 10–20 moderate, 21–35 moderate-to-severe, and above 35 is severe (Foa, et al., 1997). In addition to the total severity score, the PDS provides scores for the re-experiencing, avoidance/emotional numbing, and hyperactivity symptom clusters. Strong internal consistencies have been demonstrated for the PDS, with a coefficient alpha of .92 for the total PTSD score (utilized in diagnosing PTSD), .78 for Re-experiencing, .84 for Avoidance, and .84 for Arousal subscales (utilized in assessing symptom severity; Foa, et al., 1997). Strong two-week test-retest reliability has been shown for both PTSD diagnoses obtained via the PDS (.74), as well as symptom severity (effect sizes for change in symptom severity over a two-week interval range from .12 to .17, demonstrating clinically insignificant changes in PTSD symptom severity; Foa, et al., 1997). The validity of PTSD diagnoses obtained via the PDS in comparison with the Structured Clinical Interview
for DSM-III-R—Posttraumatic Stress Disorder (SCID-PTSD) module (Spitzer, Williams, Gibbon, & First, 1990) is equally strong (kappa of .65, with 82% agreement between the two measures; Foa, et al., 1997). PDS symptom severity scores were used as the outcome variable in this study. For participants in the current study who completed the PDS at the time 1 (baseline) assessment the internal consistency of the PDS symptom severity was high at .88. Additionally, the mean score for this sample was in the moderate range ($M = 12.33, SD = 9.9$, range 0–49).

The Peritraumatic Dissociative Experiences Questionnaire—Self Report (PDEQ-SR; Marmar, Weiss, & Metzler, 1997) is a 10-item, self-report measure for assessing retrospective reports of depersonalization, derealization, amnesia, out-of-body experience, and altered time perception at the time of the traumatic event. Participants rate each item on the measure using a 5-point Likert-type scale. Tichenor, Marmar, Weiss, Metzler, and Ronfeldt (1996) reported moderate internal consistency for the measure (Cronbach alpha = .74), as well as moderate convergent and divergent validity. Convergent validity was demonstrated via comparison with measures of war-zone stress exposure ($r = .23$) and the Dissociative Experiences Questionnaire ($r = .26$). Discriminant validity was demonstrated by non-significant correlations with the 10 clinical scales of the MMPI-2 (ranging from -.08 to .12). The PDEQ-SR has been used in studies examining the relation between peritraumatic dissociation and posttraumatic stress (e.g., Tichenor et al., 1996). Higher scores indicate greater peritraumatic symptomatology. Participants in the current investigation were asked to complete the PDEQ-SR in reference to their index event indicated on the PDS. The total score of the PDEQ-SR was used in the current study to examine the relationship between the peritraumatic dissociative response and PTSD symptom severity. For participants who completed the PDEQ at the baseline assessment the internal consistency of the measure was high at .87. The mean score for the sample was 22.50 ($SD = 9.2$, range 10–46).

Acceptance and Action Questionnaire (AAQ; Hayes et al., in press). The AAQ is a nine-item measure of experiential avoidance that uses a Likert-type scale ranging from 1 (never true) to 7 (always true). This measure is balanced for responding, with half of the items requiring reverse scoring. Taken together, the nine items offer key aspects of the experiential avoidance construct and link experiential avoidance to inaction, the literalness of thoughts, controlling private events in the same manner as real-world events, and escape or avoidance of negatively evaluated content (Hayes et al., in press). Respondents evaluate statements such as “When I feel depressed or anxious, I am unable to take care of my responsibilities,” “I’m not afraid of my feelings (reversed scored),” and “Anxiety is bad.”

The internal consistency of the AAQ is .70 and it has been found to correlate moderately to highly with measures of general psychopathology as well as with specific measures of depression, anxiety, social phobia, anxiety sensitivity, and posttraumatic stress symptomatology (Hayes et al., in press). The AAQ has also demonstrated convergent validity (.44–.50) with the White Bear Suppression Inventory (Wegner & Zanakos, 1994), another measure of avoidant coping. The possible range of scores on the AAQ is 9 to 63, with higher scores indicating greater experiential avoidance. The total score for the AAQ was used as a predictor variable in this investigation. For participants in this study who completed the AAQ at the baseline assessment the internal consistency of the AAQ was moderate at .69. The mean score for this sample was 35.77 ($SD = 7.7$, range 16–56).
2.3. Procedure

During the first session, after obtaining informed consent, participants completed the PDS, PDEQ-SR, AAQ, and a demographic questionnaire. All participants completed the PDS, as well as some other measures not examined in this investigation, at time 2 (4 weeks later). As noted previously, a randomly selected subset of 70 participants was asked to return another 4 weeks later to complete these measures at time 3 (8 week assessment). These follow-up time periods were used in order to be consistent with the time frame used by the PDS to endorse symptom presence and severity, as well as to minimize rates of attrition related to longer follow-up assessments.

3. Results

3.1. Descriptive analyses

The mean age of the 185 participants who were assessed at baseline was 19.6 (SD=2.6). The majority (i.e., 71%) of these participants were female and White (56%) with the remaining participants representing a diverse racial background (23% African-American, 6% Asian-American, 7% Hispanic, 1% Native American, 1% Pacific Islander, and 6% “other” or mixed racial background). Consistent with the literature (Scarpa, 2001; Scarpa et al., 2002; Vrana & Lauterbach, 1994), a majority of the sample (n = 124, 67%) endorsed experiencing multiple traumatic experiences (see Table 1). Table 1 also presents the frequencies of the index event reported by participants in the study. Approximately 8% of the sample reported that their index event occurred less than one month ago, 6% reported that it occurred one to three months ago, 6% reported that it occurred four to six months ago, 3% reported it occurred seven to nine months ago, 2% reported it occurred ten to twelve months ago, and 1% reported it occurred more than one year ago.

<table>
<thead>
<tr>
<th>Traumatic event</th>
<th>% Endorsing</th>
<th>% Identifying</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious accident, fire, or explosion</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>Natural Disaster</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Non-sexual assault by family member/acquaintance</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>Non-sexual assault by stranger</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>Sexual assault by family member/acquaintance</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Sexual assault by stranger</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Military combat</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Child sexual contact with someone 5+ years older</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Imprisonment</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Torture</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Life-threatening illness</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>Other traumatic experiences</td>
<td>30</td>
<td>26</td>
</tr>
</tbody>
</table>

Note. Percentages for endorsing add to greater than 100 as a result of multiple traumatization reported by some participants. Other traumatic experiences category primarily includes unexpected death in the family and witnessing a violent assault or accident.
8% reported that it occurred three to six months ago, 31% reported that it occurred 6 months to 3 years ago, 14% reported that it occurred three to five years ago, and 33% reported that it occurred more than five years ago.

Shapiro-Wilk tests of normality were conducted on all independent and dependent variables. These tests revealed that posttraumatic stress severity scores at all assessment points violated the assumption of normality (all \( p \)'s < .001). A square-root transformation was subsequently used to reduce skewness and normalize these data. Follow-up tests of normality revealed that the transformations were successful (all \( p \)'s > .05).

A zero-order correlation matrix of the measures included in the study is presented in Table 2. As can be seen, the measures were significantly correlated with one another. However, none of the correlations were large enough to preclude conducting regression analyses. Additional analyses indicated no significant relationships between the measures and age or sex of participants.

### 3.2. Multiple regression analyses

In order to test the hypothesis that peritraumatic dissociation serves as a proxy variable for experiential avoidance in its relationship with PTSD symptoms, we conducted a hierarchical regression analysis in which we regressed PTSD severity scores (PDS) at time 1 on experiential avoidance (AAQ) and peritraumatic dissociation (PDEQ-SR) scores. In step 1 of this analysis, experiential avoidance scores were included in order to control for the relationship between baseline levels of PTSD symptom severity and experiential avoidance. In step 2, peritraumatic dissociation scores were added to the regression equation. This approach allowed us to examine if peritraumatic dissociation accounted for a significant increment in the variance of PTSD severity above and beyond experiential avoidance. If peritraumatic dissociation does serve as a proxy risk factor for experiential avoidance, then analyses should reveal that peritraumatic dissociation does not account for any additional variance. Contrary to our hypothesis, analyses revealed that both experiential avoidance, \( \beta = .29 \), \( t = 3.99 \), \( p < .001 \), and peritraumatic dissociation, \( \beta = .34 \), \( t = 4.96 \), \( p < .001 \), predicted PTSD symptom severity, adjusted \( R^2 = .18 \), \( F(2, 183) = 21.26 \), \( p < .001 \).

### Table 2
Zero-order correlation matrix of baseline measures

<table>
<thead>
<tr>
<th></th>
<th>AAQ</th>
<th>PDEQ</th>
<th>PDS</th>
<th>PDS-R</th>
<th>PDS-E</th>
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<tr>
<td>AAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDEQ</td>
<td>.25**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDS</td>
<td>.31**</td>
<td>.43**</td>
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<tr>
<td>PDS-R</td>
<td>.20*</td>
<td>.34**</td>
<td>.86**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDS-E</td>
<td>.30**</td>
<td>.36**</td>
<td>.91**</td>
<td>.68**</td>
<td></td>
</tr>
<tr>
<td>PDS-H</td>
<td>.24**</td>
<td>.31**</td>
<td>.84**</td>
<td>.59**</td>
<td>.64**</td>
</tr>
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</table>

Note: AAQ = Acceptance and Action Questionnaire; PDEQ = Peritraumatic Dissociation Experiences Scale; PDS = Posttraumatic Stress Diagnostic Scale Severity Score; PDS-R = Posttraumatic Stress Diagnostic Scale—Reexperiencing Scale; PDS-E = Posttraumatic Stress Diagnostic Scale—Emotional Numbing Scale; PDS-H = Posttraumatic Stress Diagnostic Scale—Hyperarousal Scale. *\( p < .01 \); **\( p < .001 \).
In order to test the hypothesis that experiential avoidance would continue to predict PTSD symptom severity at both follow-up assessments, even when baseline levels of PTSD symptomatology were accounted for, we conducted two additional hierarchical regression analyses. In step 1 of both of these analyses, time 1 PTSD symptom severity was included in order to control for baseline levels of PTSD symptoms. Experiential avoidance scores were then introduced on step 2 and peritraumatic dissociation scores were introduced on step 3. This approach allowed us to examine if both experiential avoidance and peritraumatic dissociation accounted for additional variance over and above baseline PTSD severity scores and to see if peritraumatic dissociation continued to account for a significant increment in the variance of PTSD severity above and beyond experiential avoidance. In the first hierarchical regression, time 2 PTSD symptom severity scores (4 week follow-up) were used as the dependent variable. Only experiential avoidance significantly predicted PTSD symptom severity, $\beta = .31, p < .001$, and accounted for a significant increment in the variance of PTSD symptom severity, $R^2 = .09, p < .001$; total adjusted $R^2 = .46, F(3, 171) = 48.64, p < .001$, above and beyond initial PTSD symptoms.

In the second hierarchical regression, time 3 PTSD symptom severity scores (8 week follow-up) were used as the dependent variable. Again, results showed that only experiential avoidance significantly predicted PTSD symptom severity, $\beta = .35, p < .01$, and accounted for a significant increment in the variance of PTSD symptom severity, $R^2 = .09, p < .001$; total adjusted $R^2 = .29, F(3, 69) = 10.30, p < .001$, above and beyond initial PTSD symptom severity (see Table 3).

4. Discussion

The present investigation examined whether or not peritraumatic dissociation serves as a proxy risk factor for experiential avoidance in its relationship with PTSD symptomatology among an undergraduate sample of trauma survivors. Using a prospective research design to examine the nature of the relationships among PTSD symptoms, peritraumatic dissociation, and experiential avoidance over time, while accounting for baseline PTSD symptom severity, we found that, at baseline, both peritraumatic dissociation and experiential avoidance significantly predicted PTSD symptom severity. We also found that, over time, experiential avoidance significantly predicted PTSD symptom severity over and above baseline PTSD symptom scores and that peritraumatic dissociation did not predict PTSD symptom severity once initial levels of PTSD were taken into account.

These results suggest that, contrary to expectations, peritraumatic dissociation does not serve as a proxy variable for experiential avoidance in its relationship with PTSD symptoms. In other words, the findings suggest that the relationship between peritraumatic dissociation and PTSD symptomatology is not the result of the relationship between these two variables and experiential avoidance. This is further indicated by the fact that the strength of the correlation between time 1 experiential avoidance and peritraumatic dissociation scores was not substantial (only 5% of the variance accounted for). However, the results of the current investigation provide direct support for the speculation that experiential avoidance may play an important role in the maintenance of psychological difficulties following a traumatic experience.
Although we replicated the finding from other studies that baseline levels of PTSD symptomatology and peritraumatic dissociation are related to one another, the findings reported here also are consistent with a growing uncertainty of the role of peritraumatic dissociation in the development of PTSD. While the results of the current investigation cannot definitively provide an answer to this question, they do suggest that peritraumatic dissociation may play less of a role in the maintenance of PTSD symptoms over time. Taken together with the findings from some previous studies (e.g., Gershuny, Cloitre, & Otto, 2003; Marshall & Schell, 2002), the results of this study indicate that the nature of the relationship between peritraumatic dissociation and PTSD requires re-evaluation. For example, rather than being a risk factor for or precursor to

<table>
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<th>Predictor</th>
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<th>$B$</th>
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<td>.38**</td>
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<tr>
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<tr>
<td>Step 2</td>
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<td><strong>Model 2</strong>&lt;br&gt;Step 1</td>
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<td>.61**</td>
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Note. *p < .01; **p < .001; $\Delta \ Adj. R^2$ = change in adjusted $R^2$; $B$ = standardized regression coefficient; $\beta$ = unstandardized regression coefficient; SE = standard error; AAQ = Acceptance and Action Questionnaire; PDEQ-SR = Peritraumatic Dissociative Experiences Questionnaire-Self Report version; PDS = Posttraumatic Stress Diagnostic Scale severity scores, time 1; Model 1 predicted time 1 (baseline) PDS severity scores; Model 2 predicted time 2 (4-week follow up) PDS severity scores; Model 3 predicted time 3 (8-week follow up) PDS severity scores.

Although we replicated the finding from other studies that baseline levels of PTSD symptomatology and peritraumatic dissociation are related to one another, the findings reported here also are consistent with a growing uncertainty of the role of peritraumatic dissociation in the development of PTSD. While the results of the current investigation cannot definitively provide an answer to this question, they do suggest that peritraumatic dissociation may play less of a role in the maintenance of PTSD symptoms over time. Taken together with the findings from some previous studies (e.g., Gershuny, Cloitre, & Otto, 2003; Marshall & Schell, 2002), the results of this study indicate that the nature of the relationship between peritraumatic dissociation and PTSD requires re-evaluation. For example, rather than being a risk factor for or precursor to
PTSD, the symptoms of peritraumatic dissociation may, in fact, be a part of the PTSD syndrome. In other words, peritraumatic dissociative symptoms may constitute another symptom cluster of PTSD. This possibility is consistent with the finding here that peritraumatic dissociation scores were significantly, yet relatively modestly, correlated with participants’ PDS severity scores as well as with the various subscales of the PDS. Others have previously speculated that dissociation is a component of PTSD (Brett, 1993; van der Kolk et al., 1996). Thus, a shift in the conceptualization of PTSD in which dissociation is viewed as an integral component of the disorder may be necessary.

As already mentioned, the results of this study suggest that experiential avoidance is an important factor in the maintenance of PTSD symptoms. These findings are consistent with that of previous work suggesting that trauma survivors are likely to engage in experiential avoidance and that such behavioral repertoires are related to diminished levels of psychological functioning (Follette, 1994; Leitenberg, et al., 1992; Marx & Sloan, 2002; Polusny & Follette, 1995; Walser & Hayes, 1998). The avoidance and control of private experiences is likely a common goal for a substantial proportion of trauma survivors as they may be unwilling to experience certain affect, thoughts, memories, and sensations. Clearly, the avoidance of various stimuli and situations and emotional numbing are cardinal symptoms of PTSD. The pervasiveness of avoidance behaviors and their role in trauma-related problems support the hypothesized relationship between experiential avoidance and PTSD. However, additional research is needed to more closely examine the role of experiential avoidance in PTSD. For instance, it would be useful to examine whether PTSD develops in the absence of experiential avoidance. Similarly, it may be important to determine the level or threshold of experiential avoidance at which PTSD and/or psychological problems develop.

Some researchers have previously suggested that peritraumatic dissociation functions to protect individuals from experiencing highly aversive emotions that may occur during or immediately after a traumatic event (e.g., van der Kolk, 1987; Wagner & Linehan, 1998). This conceptualization of peritraumatic dissociation substantially overlaps with the conceptualization of experiential avoidance, which is seen as attempts to psychologically distance oneself from aversive private events (e.g., Hayes, 1987). Despite the conceptual similarities, peritraumatic dissociation was not found to be a proxy for experiential avoidance in this study. Furthermore, at baseline, reports of peritraumatic dissociation and experiential avoidance were significantly related to one another, but only at relatively modest levels. These findings may be due to the fact that the sample consisted of a heterogenous group of trauma survivors. In other words, it is possible that these results may have differed substantially if the sample was more homogenous with respect to trauma history. For example, it has been shown that reports of dissociative experiences are particularly associated to reports of childhood trauma (sexual abuse, particularly) and sexual assault in adulthood (Chu & Dill, 1990; Dancu, Riggs, Hearst-Ikeda, Shoyer, & Foa, 1996; Kirby, Chu, & Dill, 1993; Zlotnick et al., 1994). Therefore, it may be the case that dissociative behavior may serve the hypothesized protective function for individuals who have survived such experiences, while peritraumatic dissociation may serve a different function or may not be present at all among other groups of trauma survivors. It is also possible that peritraumatic dissociative behaviors may not serve any protective function, as generally thought. Rather, peritraumatic dissociation may be a by-product of other trauma-related processes. The lack of robust findings reported here may also indicate problems associated with attempting to measure
peritraumatic dissociation (e.g., Marshall & Schell, 2002) and the fact that experiential avoidance is a relatively new construct, indexed by a measure that requires further study. Another possibility is that peritraumatic dissociation was not found to be a proxy for experiential avoidance because the relationship between peritraumatic dissociation and PTSD is caused by a third variable not examined in this study. It would be important for future investigations to examine other factors that may influence the relationship between peritraumatic dissociation and PTSD.

The findings presented here may have important implications for the treatment of trauma survivors. In particular, it would seem important that treatments for trauma survivors emphasize the acceptance of specific private events as an essential skill. More specifically, interventions for trauma survivors should promote the abandonment of all attempts to control one’s unwanted thoughts, feelings, memories, and sensations, since it is that very approach to living that actually results in further entanglement with those very private experiences and, ultimately, to the development of behavioral difficulties. An example of such a treatment is Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). The goals of ACT are to help the client recognize the unworkability of experiential avoidance and to develop a new repertoire for experiencing painful thoughts and feelings that is more adaptive (Walser & Hayes, 1998). The findings of this study indicate that acceptance-based treatments, such as ACT, may be critical for trauma survivors. However, as the work in this area is quite sparse, the findings obtained in this study need to be further explored before advocating any particularly therapy model for trauma survivors. The findings also suggest that other, better established treatments for trauma survivors may be effective not because they extinguish pathological fear or change other unwanted private experiences but, rather, because they teach the client how to make contact with and tolerate (accept) previously avoided private events.

Several limitations of this study should be noted. The sample examined in this study was comprised of undergraduate students, potentially limiting the generalizability of the findings. Related to this, the level of symptomatology reported by this sample generally fell into the low end of the moderate range of severity. Consequently, these results may not be replicated with a clinical sample who would likely report a more severe level of PTSD symptoms. Another limitation is that the data are self-report and retrospective in nature and, thus, may have limited reliability. Also, the extended time between the occurrence of actual traumatization and participation in this study for most of the participants may have affected their retrospective reports of peritraumatic dissociation. Research has indicated that recall of peritraumatic dissociative experiences that took place months following exposure may not be accurate reports of an individual’s actual dissociative behavior (Marshall & Schell, 2002).

In summary, the results of this study are intriguing as the findings indicate that experiential avoidance is a predictor of subsequent psychological disturbance for those with a trauma history. Additionally, the findings further substantiate the reduced importance of peritraumatic dissociation in the development and maintenance of PTSD symptoms. Lastly, these results suggest that additional work aimed at examining the role of experiential avoidance in psychological difficulties among persons with trauma histories may hold promise for improving treatment efforts and understanding the phenomenology of psychological problems associated with trauma.
References


