

Posttraumatic Stress Disorder Upon Admission to Shelters Among Female Victims of Domestic Violence: An Ecological Model of Trauma

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The study used the ecological model of trauma and recovery (Harvey, 1996) to examine the rates of probable posttraumatic stress disorder (PTSD) among female victims of domestic violence. Five hundred and five participants completed questionnaires upon entering shelters in Israel. Analysis showed that 61% of the participants reported probable PTSD. Childhood exposure to violence, violence severity, and feeling helpless were all associated with high PTSD levels. By contrast, Ethiopian ethnicity, social support, and a stronger sense of control were associated with lower PTSD levels. However, the interaction between social support and violence duration showed that social support did not moderate PTSD when exposure to violence endured. The study emphasizes that resources deteriorate, and that policy-augmenting prevention programs would increase treatment potential to strengthen survivors' coping capacities.

Keywords: violence against women; PTSD; shelters; social support; sense of control; ecological model

Violence against women is a worldwide social health problem of epidemic proportions (John, Johnson, Kukreja, Found, & Lindow, 2004). Global surveys demonstrate that most of this violence is domestic (Devries et al., 2013). Findings from the first and only national Israeli survey (Eisikovits et al., 2004) demonstrated that the prevalence of domestic violence in Israel is generally similar to the prevalence in the United States. The researchers found that the rates of psychological aggression in Israel were slightly higher than in the United States, whereas the rates of physical aggression were found to be lower (Eisikovits et al., 2004). The survey also revealed that certain minority groups in Israel stand out for the high rates of domestic violence they suffer, as has been shown in other studies as well—Arab women; former Soviet Union-born women; and

Ethiopian-born women. These three groups live with social norms that legitimize intimate partner violence, and put the blame on the women themselves for the partner violence carried out against them (Ben-Porat, 2010; Haj-Yahia, 2002).

Learning models of traumatic stress postulate that individuals perceive loss of control during traumatic encounters that can result in distress, fear, or panic (Lissek & van Meurs, 2015). Such perceptions of loss of behavioral, cognitive, and emotional control leads to fear of possible future occurrences of the event and a sense of helplessness, thereby causing traumatic stress symptoms. Prolonged exposure to multiple physical, psychological, and sexual violence stressors reinforces such helplessness effects (Basoglu & Salcioglu, 2011) and results in posttraumatic symptoms.

Posttraumatic stress disorder (PTSD) is a central stress response to traumatic events including intimate violence, and is manifested in intrusive reexperiencing of the violent incidents, avoidant behaviors, hyperarousal, and negative cognitions (American Psychiatric Association [APA], 2013). A meta-analysis showed that between 31% and 84.4% of all female domestic violence victims suffered from PTSD (Golding, 1999).

The ecological model of trauma and recovery suggests that in the development of PTSD there is an interaction between the event, the person, and the environment (Harvey, 1996). This model of trauma argues that resilience and coping are transactional consequences of the complex relationships between individuals and their communities (Harvey, 1996; Harvey et al., 2003). The model therefore consists of three factors. The first factor includes the individual's coping capacities, as well as her history of coping with prior trauma. The second factor includes the frequency, severity, and duration of violent and traumatic events, and the resultant subjective terror and humiliation experienced by the individual. The third factor includes the degree of community support, both during and after exposure to violent and traumatic threats. The result of such transactions is a wide range of different individual reactions to violent and traumatic events (Harvey, 1996; Harvey et al., 2003).

The current study used the ecological model to predict PTSD among a large sample of violence survivors upon their admission to shelters in Israel. First, an examination of the rates of probable PTSD was conducted. Second, based on the ecological model of trauma, an examination of the following factors' contribution to the variability of PTSD was conducted: the severity and duration of violence before survivors' entrance to the shelters, as well as their exposure to violence during childhood; the contribution of their coping capacities (i.e., their personal sense of control); the contribution of their interpersonal resources (i.e., social support); and finally, the contribution of the interactions between these variables.

TRAUMATIC EVENTS

Research shows that intimate violence has an intermittent pattern that can escalate throughout the years, to a level of life-endangerment (Campbell, Webster, & Glass, 2009). Among shelter residents, the prevalence of severe violence was indeed found to be radical, as most of the survivors believed they would be killed by their spouses, and many required medical care (Bargai, Ben-Shakhar, & Shalev, 2007; Campbell et al., 2009; Mertin & Mohr, 2001). Commonly, domestic female violence survivors apply to shelters after undergoing an acute event causing them serious injury (Clevenger & Roe-Sepowitz, 2009). In short, shelter residents, as these findings illustrate, are exposed to traumatic events as defined by the *DSM* (APA, 2000, 2013).

Research also shows that shelter residents report higher rates of childhood exposure to violence—both that which existed among their parents and that which was directed toward them—in comparison to the general population (Briere & Jordan, 2009). The significance of these findings stems from the association that was found between PTSD during childhood and high levels of stress in intimate relationships (Astin, Ogland-Hand, & Foy, 2002), suggesting the existence of a predisposition to PTSD (Alexander, 2009; Graham-Berman & Levendosky, 1998).

INDIVIDUAL CAPACITIES

An individual's capacity to adapt is commonly termed personal efficacy (Harvey, 1996). Personal efficacy is determined by the individual's personal sense of control that derives from the success of her efforts to influence external events (Gurin, Gurin, & Morison, 1978). Sense of control exists on a spectrum ranging from a positive locus of control to a negative locus of control (Brewin & Shapiro, 1984) and has been found to be related to well-being, mental and physical health, and social status (Lachman & Weaver, 1998). Personal efficacy and personal sense of control are also central concepts in posttraumatic growth and recovery (Domhardt, Munzer, Fegert, & Goldbeck, 2015; Elderton, Berry, & Chan, 2015).

Sense of control can shift during the course of a violent intimate relationship. Following pioneering work (Maier & Seligman, 1976; Walker, 2016), research has consistently shown that among victims of abuse, personal efficacy is often replaced by a dysfunctional coping strategy termed Learned Helplessness (LH) (Mikulincer & Shaver, 2015). LH is formed by a state of affairs between a victim and her surroundings, in which the probability of her taking action to avoid further violence is equal to the probability of her not taking action. The victim's subjective perceptions shift in accordance with events she has already been exposed to, and she therefore perceives external events in general as uncontrollable regardless of their objective nature (Mikulincer & Shaver, 2015). LH is related to low levels of self-efficacy, which can then be generalized into a wide range of passive behaviors (Kay, Sullivan, & Landau, 2015). Recent findings indicate that LH is also associated with low levels of activity in brain regions that govern the capacity to enjoy reinforcements, and anhedonia (Eshel & Roiser, 2010; Maier & Watkins, 2005).

Sense of control and LH are directly related to stress responses after traumatic events (Kay et al., 2015). Sense of control during traumatic events has been found to decrease the odds of PTSD, whereas an LH response and helpless feelings during traumatic events increase PTSD odds (Maes, Delmeire, Mylle, & Altamura, 2001). Sense of control has also been found to moderate the contribution of violence severity to PTSD: Higher LH scores were associated with higher PTSD symptoms among survivors reporting severe violence, whereas high scores of sense of control were associated with lower PTSD symptoms (Bargai et al., 2007).

SOCIAL SUPPORT

Community can be a source of support and protection for individuals who are at risk of violence via social interactions (Harvey, 1996). Social support is a differential concept formed by cultural values and traditions (Harvey et al., 2003); thus, it is also related to a

well-integrated ethnic community, which derives in part from supportive social interactions (Phinney, Horenczyk, Liebkind, & Vedder, 2001). A fabric of interpersonal relationships such as advice-giving or affection, or the mere belief that such possibilities exist, can contribute to an individual's mental and physical well-being (Lahey & Cohen, 2000). Social support is therefore considered a meaningful mechanism by which an individual can cope with the stress and perceived threats caused by one's external reality (Kaniasty & Norris, 2008).

Research has found a direct relationship between social support and PTSD. Decreased emotional support from friends and family was associated with poorer physical and mental health of women reporting ongoing violence, and was also associated with higher scores of PTSD (Coker, Weston, Creson, Justice, & Blakeney, 2005). In addition, social support has also been found to buffer the implications of exposure to violence. Women who reported accumulated trauma (i.e., histories of child abuse and sexual assault during adulthood), but who had high social support, reported lower PTSD symptoms in comparison to women who reported histories of child abuse and sexual assault during adulthood but who had lower social support (Schumm, Briggs-Phillips, & Hobfoll, 2006).

However, there is an interaction between traumatic events and social support. The social support deterioration model demonstrates that traumatic events induce erosion of social support: trauma survivors have a tendency to withdraw, and the resultant lack of social support means there is little to buffer the victim from the damaging consequences of the traumatic event (Kaniasty & Norris, 1995). Nevertheless, research has shown that deterioration of social support is not inevitable, and when victims receive high levels of support after experiencing traumatic events, they tend to be protected against the erosion of social availability (Norris & Kaniasty, 1996).

The deterioration model of social support plays an important role in cases of domestic violence, as abusive behaviors have been found to be related to the victim's reduced social functioning (Bonomi et al., 2006), and as the victim's social support systems are often targeted by the abuser's aggressive controlling behaviors (Eisikovits et al., 2004; Kelly & Johnson, 2008). However, the literature is inconclusive about the interaction between violence against women and social support (Lee, Pomeroy, & Bohman, 2007). Therefore, the current study aimed to explore both the direct contribution and the interaction between social support and PTSD resulting from violence against women.

THE CURRENT STUDY

In light of the structure of violence against women, the current research used the ecological model of trauma to predict the probability of PTSD among female survivors of domestic violence in shelters. First, upon their admission to the shelters, survivors' probable PTSD rates were measured. Second, the current study hypothesized that high exposure to violence during childhood, along with greater duration and severity of recent exposure to verbal, emotional, and physical violence, would be associated with high levels of PTSD; high sense of control would be associated with low PTSD levels; and high social support would be associated with low PTSD levels. In addition, the ability of personal and community resources (sense of control and social support, respectively) to moderate the consequences of exposure to intimate violence was measured.

METHOD

Participants

The current study is part of a nationwide study of female victims of domestic violence in shelters throughout Israel. Data concerning the goals of this study—that is, to examine the contribution of childhood violence exposure, domestic violence victimization among women in adulthood, social support, and sense of control to probable PTSD—were extracted from the general database and included in the current study.

Between September 2009 and April 2014, a total of 1,409 female domestic violence survivors were referred to 12 Israeli shelters. Eighty-three women with cognitive disabilities or with diagnosed psychiatric disorders not related to domestic violence, as well as 375 women who left the shelter within 7 days of their arrival, were not included in the study. Out of the remaining 951 women, 526 women completed the questionnaires (response rate 55.3%). Twenty additional respondents were then excluded from the study's sample due to their completion of less than 42% of the questionnaire items. Thus, the final study sample included 505 women.

Procedure

The participants were approached by the shelters' social workers and given a self-report questionnaire in one of the following languages: Hebrew, Arabic, Russian, or Amharic. Female translators were available when required. The participants were asked to complete the questionnaire within 3 weeks of entering the shelter.

The study was approved by the Institutional Review Board of the university at which the research was being conducted, and by the Israeli Ministry of Welfare and Social Services. All participants signed informed consent forms and were assured that refusal to participate would not affect their stay at the shelter. After completion, the questionnaires were separated from the consent forms, sealed in envelopes, and delivered to the researchers with no personal information attached, so as to guarantee the participants' anonymity.

Measures

Demographic Questionnaire. Participants were asked to describe their personal characteristics: year of birth, ethnic origin, religion, country/countries of citizenship, education, income level, employment status, and family situation (marital status, number of children, and number of children residing in the shelter).

Childhood Exposure to Violence. Three items measured violent traumatic events during childhood: (a) During childhood you were physically beaten by your parents; (b) During childhood you witnessed violence between your parents; (c) During childhood you were sexually assaulted. Participants were asked whether they had experienced any of these events by using a "yes/no" format, and the number of yeses was counted.

Violence Severity. The questionnaire (Eisikovits, Winstok, & Fishman, 2004) contains 13 items measuring different types and frequency of violence: verbal assault (cursing, insulting, yelling); psychological or emotional abuse (threatening, controlling, domineering, stalking, isolating, or resource-preventing behaviors); and physical assault (the breaking of material items, moderate physical violence, severe physical violence). For each of these items, the participants were asked to rank the frequency of abuse on a 4-point Likert scale ranging from 1 (*once*) to 4 (*every day*). The overall reliability was ($\alpha = .90$).

Duration of Violence. Participants were asked to describe the length of the recent violent relationship, in number of years, prior to shelter admission.

Sense of Control. This questionnaire (Pearlin & Schooler, 1978), translated into Hebrew (Hobfoll & Wolfish, 1984), contains six items measuring an individual's sense of control, via statements describing the participant's perceptions, such as, "I have very little control over the things that happen to me." The participant's agreement was measured on a 5-point Likert scale ranging from 1 (*I do not agree at all*) to 5 (*I very much agree*). Factor analysis technique (Principal Axis Factoring with Oblimin rotation) was utilized to explore the dimensionality of this construct. The analysis determined two distinguished (orthogonal) factors: "sense of future control" (two items) related to the feeling of being able to take action in the future, and "feeling helpless" (four items) related to feelings of helplessness in the present, for which higher scores reflected a stronger sense of future control, or a stronger feeling of helplessness, respectively. In the current research, reliability of the two factors was ($\alpha = .61$) and ($\alpha = .65$), respectively. Although these levels are considered to be below the common threshold ($\alpha > .70$), an alternative one-index for all six items yielded a much lower consistency level ($\alpha = .51$).

Social Support. This questionnaire (Soskolne & Manor, 2009), based on that of Karlsson, Sjostrom, and Sullivan (1995), measures emotional, financial, and informational support, via statements describing the participant's perceptions, for example: "In what capacity is someone available to you during a crisis to offer advice, information, or guidance?" Six items were ranked on a 5-point Likert scale ranging from 1 (*never*) to 5 (*all the time*). The reliability reported in Soskolne and Manor (2009) was ($\alpha = .89$). In the current study, reliability was ($\alpha = .82$).

PTSD Severity. This PTSD scale self-report (Solomon & Horesh, 2007) evaluated the occurrence of 17 PTSD symptoms upon the individual's entrance to the shelter and was based on the preceding 2 weeks. Five items measured intrusive symptoms, seven items measured avoidance symptoms, and five items measured arousal symptoms. The items ranged on a 4-point Likert scale from 1 (*never*) to 4 (*often*). The probable diagnosis of PTSD according to the *DSM-IV*, which had been in use during the carrying out of the current study, required the occurrence of at least one intrusive symptom, at least three avoidance symptoms, and at least two arousal symptoms. In addition, an average mean of the symptom's level was calculated. Reliability in earlier studies was high (e.g., Solomon, Dekel, & Zerach, 2009). In the current research, reliability was ($\alpha = .84$).

Statistical Analysis

First, a Pearson correlation test was conducted to examine each variable's relationship to PTSD. Next, the four steps of the regression were calculated in accordance with the ecological model of trauma (Harvey, 1996) and included only variables that appeared in the research interactions. Our test for normality resulted in $p = .20$ for the Kolmogorov–Smirnov test of normality, and $p = .18$ for the Shapiro–Wilk test of normality. This finding indicated an approximately normal distribution for the PTSD level (Field, 2009).

The first step included exposure to violence during childhood and ethnic identity, where ethnic identity entered the regression as three dummy variables (i.e., Arab ethnicity vs. native Israeli; Russian ethnicity vs. native Israeli; Ethiopian ethnicity vs. native Israeli). The second step included ecological threats in the form of violence severity and duration of violence. The third step included personal adaptive capabilities and ecological support, that is, personal sense of control and social support, respectively. And finally, the fourth step included interactions between variables from all levels of the ecological model.

RESULTS

Sample Characteristics

The participants in the sample came from a variety of socioeconomic backgrounds. In addition, 149 participants were of Jewish ethnicity (29.5%), 154 were of Arab ethnicity (30.5%), 125 were of Russian ethnicity (24.8%), and 77 were of Ethiopian ethnicity (15.2%).

The average age of the participants was $M = 32.65$ ($SD = 8.54$), and they had an average of $M = 11.21$ ($SD = 3.27$) years of education and an average of 2.49 children ($SD = 1.65$). 44.7% of the women earned minimum wage at their jobs ($M = 3,600$ NIS).

Sixty percent of the participants were referred to the shelters by a social worker from local social welfare services, and 32.6% were referred by local police departments. A prevalence of 44.1% of the participants applied to shelters after experiencing an acutely violent event, and 29.7% of the participants had applied to shelters previously. 60.5% reported direct exposure to violence during childhood (i.e., either being physically or sexually abused, or witnessing parental violence); 83.8% reported being the victims of mild recent physical aggression; 75.2% reported being the victims of recent severe acute violence; and 74.1% reported threats on their lives. Ninety-three percent of the women reported verbal and emotional abuse, and 78.3% reported financial abuse.

PTSD and Correlations

A classification of the women based on *DSM-IV* criteria showed that 61% of the participants reported probable PTSD upon admission to the shelters. Table 1 presents Pearson's correlations between the study variables and the PTSD level. Demographic variables such as age, income, and education were not correlated with PTSD. The only demographic variable found to be related to PTSD was Ethiopian ethnicity, which had a negative correlation of ($r = -.107$, $p = .010$).

Exposure to violence during childhood ($r = .22$, $p < .001$), violence severity ($r = .24$, $p < .001$), violence duration ($r = .20$, $p < .001$), and feeling helpless ($r = .35$, $p < .001$) were all found to be associated significantly with higher PTSD. By contrast, high levels of social support ($r = -.14$, $p < .005$) and a stronger sense of control ($r = -.19$, $p < .001$) were associated with lower PTSD.

Multivariables Analysis: The Contribution of Study Variables to PTSD

Table 2 presents the b , $SD b$, and the beta coefficients of each variable in the four steps of the hierarchical regression of the study variables.

TABLE 1. Pearson's Correlations Between the Study's Variables and PTSD

Variable	Pearson Correlation
Age	.08
Years of school	-.05
Income	-.02

(Continued)

TABLE 1. Pearson's Correlations Between the Study's Variables and PTSD (Continued)

Variable	Pearson Correlation
Traumatic childhood events	.22***
Arab ethnicity vs. native Israeli	.07
Russian ethnicity vs. native Israeli	-.02
Ethiopian ethnicity vs. native Israeli	-.17**
Duration of abuse	.20***
Violence severity	.24***
Social support	-.14**
Sense of future control	-.19***
Feeling helpless	.372***

Note. PTSD = posttraumatic stress disorder.

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

TABLE 2. Multiple Variables Analysis

Independent Variables	PTSD		
	<i>b</i>	<i>SD b</i>	Beta
Step 1			
Traumatic life events in childhood	.113	.03	.20***
Arab ethnicity vs. native Israeli	.05	.07	.03
Russian ethnicity vs. native Israeli	-.05	.07	-.04
Ethiopian ethnicity vs. native Israeli	-.17	.08	-.10*
Step 2			
Traumatic life events in childhood	.10	.03	.18***
Arab ethnicity vs. native Israeli	.04	.07	.03
Russian ethnicity vs. native Israeli	-.03	.07	-.02
Ethiopian ethnicity vs. native Israeli	-.16	.08	-.09*
Violence severity	.17	.03	.22***
Duration of current violence	.02	.00	.19***

(Continued)

TABLE 2. Multiple Variables Analysis (Continued)

Independent Variables	PTSD		
	<i>b</i>	<i>SD b</i>	Beta
Step 3			
Traumatic life events in childhood	.09	.02	.16***
Arab ethnicity vs. native Israeli	.04	.06	.03
Russian ethnicity vs. native Israeli	.01	.06	.00
Ethiopian ethnicity vs. native Israeli	-.16	.08	-.10*
Violence severity	.01	.00	.15***
Duration of current violence	.13	.03	.17***
Social support	-.06	.02	-.11**
Feeling helpless	.18	.02	.32***
Sense of future control	-.08	.02	-.16***
Step 4			
Traumatic life events in childhood	.09	.02	.16***
Arab ethnicity vs. native Israeli	.04	.06	.03
Russian ethnicity vs. native Israeli	.01	.06	.00
Ethiopian ethnicity vs. native Israeli	-.16	.08	-.10*
Violence severity	.13	.03	.17***
Duration of current violence	.02	.00	.18***
Social support	-.06	.02	-.11**
Feeling helpless	.18	.02	.33***
Sense of future control	-.07	.02	-.14***
Duration of current violence X social support	.01	.00	.11**

Note. PTSD = posttraumatic stress disorder.

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

The total set of the independent variables explained 28.3% of the variance. As can be seen in the first step, which accounted for 7% of the variance, exposure to violence during childhood contributed significantly to higher PTSD symptoms ($\beta = .20$), and Ethiopian ethnicity contributed significantly to lower PTSD symptoms ($\beta = -.10$). Step 2 accounted for an additional 8% of the variance and demonstrated that higher violence severity related significantly to higher PTSD symptoms ($\beta = .22$) and that duration of the current violent relationship related significantly to higher PTSD symptoms as well ($\beta = .19$). Step 3 accounted for an additional 14% of the variance and showed a significant contribution of

feeling helpless to PTSD ($\beta = .32$), a significant negative contribution of sense of future control to PTSD ($\beta = -.16$), and a significant negative contribution of social support to PTSD symptoms ($\beta = -.11$).

The fourth step examined the contribution to PTSD of six interactions between characteristics of violence (violence severity and duration) and research variables (sense of future control and feeling helpless and social support). Only the interaction between social support and violence duration was significant ($\beta = .11, p = .007$). Probing this interaction revealed that among women with low social support, the association between duration of violence and PTSD was not significant ($\beta = 0, p = .453$), whereas among women with high social support the association was significant ($\beta = .03, p = 0$).

DISCUSSION

The goal of the current study was to examine to what extent the probability of PTSD among Israeli shelter residents can be predicted by the ecological model of trauma. Our findings distinctly denote that female domestic violence survivors who seek refuge in shelters are at risk for PTSD. A prevalence of 61% of the questionnaires reported probable PTSD, as defined by the *DSM-IV* diagnostic criteria (APA, 2000), suggesting a high level of probable PTSD among female domestic violence survivors in shelters. Bearing in mind that many additional women struggle with distress that does *not* meet the exact *DSM* criteria for PTSD, our results indicate that female violence survivors in shelters are a very high-risk population for PTSD.

Our findings are consistent with former studies of PTSD among domestic violence survivors (Bargai et al., 2007; Dutton & Painter, 1993; Hughes, Cangiano, & Hopper, 2011; Kemp, Rawlings, & Green, 1991; Khadra, Wehbe, Lachance, Skaff, & Nehme, 2015; Lilly, Howell, & Graham-Bermann, 2014; Mertin & Mohr, 2001; Pinna, Johnson, & Delahanty, 2014; Salcioglu, Urhan, Pirinccioglu, & Aydin, 2017). Our findings therefore support the idea that physical, psychological, and sexual violence in domestic settings serve as contributors to the development of PTSD (Pill, Day, & Mildred, 2017). Furthermore, the current findings are consistent with the mean prevalence of 63.8% found in a meta-analysis of PTSD among female domestic violence survivors (Golding, 1999), supporting the perspective that severe interpersonal violence is an etiological factor for PTSD (Pill et al., 2017).

Traumatic Events

The ecological model of trauma posits that an individual's coping capacity can be severely compromised by traumatic events, rendering it less effective in adapting to the stressful demands of the environment (Harvey et al., 2003). Accordingly, the current study found that a high prevalence of acute physical violence, terror, social isolation, and being exposed to life-threatening behaviors—all of which have been found in former studies (Bargai et al., 2007; Kemp et al., 1991; Mertin & Mohr, 2001)—typify the intimate relationships of female violence survivors who seek refuge in shelters, and bear a significant relationship with PTSD.

Second, our findings also identified the association between violence exposure during childhood and domestic violence victimization in adulthood, a finding which is also in accordance with that which was found in former studies (Astin et al., 2002; Briere & Jordan, 2009). In addition, our findings reveal an association between childhood

exposure to violence and higher levels of PTSD in violent adult relationships, reinforcing the perspective that childhood trauma and witnessing of parental violence are sufficient conditions for a predisposition to PTSD (Alexander, 2009; Graham-Berman & Levendosky, 1998).

Individual Capacities

The ecological model of trauma suggests that compromised personal capacities would be related to PTSD responses to violence (Harvey et al., 2003). Indeed, among shelter residents a feeling of helplessness was found to contribute significantly to PTSD. Furthermore, an individual's sense of future control stands in direct contrast to an individual's feeling of helplessness and, as such, seems to have a significant negative relationship to PTSD. These findings are in accordance with our understanding of the implications of violence: that is, feelings of helplessness are found to increase as violence goes on throughout the years, and to accompany PTSD (Bargai et al., 2007; Walker, 2016).

However, contrary to the ecological model of trauma, and also in contrast to former studies and the hypothesis of the current study, a sense of future control was not found to significantly moderate the implications of violence. A possible explanation for the inability of a sense of future control to moderate the implications of violence exposure might be explained by the destructive effects of violence on personal resources; that is, the longer the violent intimate relationship goes on, the more damage to the sense of future control, as manifested in a higher LH response (Bargai et al., 2007; Walker, 2016).

Social Support

The ecological model also postulates that social support increases an individual's capacity for coping and buffers the effects of traumatic events on the individual (Harvey et al., 2003). Our study indeed found social support to be associated with a low PTSD level, a finding which is consistent with former studies (Coker, Watkins, Smith, & Brandt, 2003). However, and not in keeping with the ecological model of trauma, the current study found a distinct decrease in the efficiency of social support over time to reduce PTSD; that is, the longer the violence continues, the more social support as a resource is diminished.

The fact that social support can be diminished over time might also be attributed to the effect of accumulated trauma: adults reporting multiple exposures to traumatic events also report the occurrence of greater numbers of PTSD symptoms (Briere, Kaltman, & Green, 2008; Gleason, 1995). Thus, although social support may remain high throughout the years, the ability to utilize it as a resource may decrease, as stressful and traumatic violent events accumulate into what seems to become a chronic state (Cloitre et al., 2009). Support for the contribution of accumulated trauma to diminished social support can also be found in a study which showed that among female victims of domestic violence, women who reported childhood abuse also reported low social support compared to other women (Dodson & Beck, 2017). More support for this idea can be found in a study among domestic violence victims, which showed that severity of PTSD symptoms predicted subsequent increases in perceived negative social support (Nickerson et al., 2017).

Unexpectedly, the current findings underline the lower PTSD level among female violence survivors of Ethiopian ethnicity in comparison to those of other ethnic origins. These results are surprising given that there is an association in the literature between immigration and psychological distress (Edelstein, 2012; Garcini et al., 2016; Ponizovsky et al., 1998; Youngmann et al., 2002). Furthermore, past stressful events have been viewed in the literature as being possible contributors to PTSD, as part of the mechanism of accumulated trauma (Briere et al., 2008; Gleason, 1995). Therefore, it would be reasonable to

expect that female Ethiopian immigrants to Israel who are also domestic violence survivors would be particularly at risk for PTSD. In addition, Ethiopian immigration has been considered to be specifically traumatic due to a high prevalence of tragic events such as injuries, diseases, and deaths (Eyal Assael, 2012). Ethiopian culture has also been found to have unique features of violence in comparison to other ethnicities, and the literature has shown that the violence is more severe and increased after immigration (Eyal Assael, 2012).

An explanation to account for this unforeseen association between female Ethiopian domestic abuse survivors and lower PTSD rates might be found in the cultural characteristics of Ethiopians, who tend to describe their emotional states in terms that differ from those commonly used in Western cultures (Cohen, 1997; Youngmann et al., 2002). In Ethiopian culture, distress seems to be manifested in somatic expressions (Youngmann, 2008), and the instruments currently used to measure PTSD may therefore not adequately reflect the customary idioms and nuances in Ethiopian culture. Evidence of the cross-cultural validity of the instruments used to measure PTSD therefore needs to be further assessed (Hinton & Lewis-Fernández, 2011).

Our study is consistent with the theoretical model of trauma and resilience (Harvey et al., 2003). Our findings support current approaches of PTSD treatment aiming to enhance coping capacities and social support, and to reduce social isolation (Domhardt et al., 2015; Elderton et al., 2015; Perez, Johnson, & Wright, 2012). The difference between the ethnic groups highlights the need for a culturally sensitive framework for understanding domestic violence and PTSD.

Moreover, our study contributes to the ecological understanding of trauma in adding the dimension of the duration of exposure to domestic violence. Previous research has shown that loss of resources is associated with further diminished resources (Hobfoll, Johnson, Ennis, & Jackson, 2003). Two possible explanations may account for the growing decrease of social support as a resource among female victims of intimate violence. The first explanation relates to the avoidance and numbing symptoms that result from decreased reward neuro-functioning, which has been found among females with PTSD in response to social positive stimuli and has been associated with social withdrawal (Nawijn et al., 2014). Another possible explanation for the ongoing decrease of social relations as a resource for the victim is the abuser's success in socially isolating the victim, a violent behavior in and of itself (Kelly & Johnson, 2008), and can be related to the ongoing decrease of social relations as a resource for the victims.

Our study emphasizes the element of time and duration in cases of violence against women, and encourages social policy to augment prevention programs. Our findings clearly indicate that the sooner female violence victims are addressed, the more resources they might still have at their disposal, which can then be strengthened in order to increase their coping capacities.

The current study nevertheless has a few limitations. First, all of the participants were shelter residents in Israel; our findings therefore may not be generalized to female victims of domestic violence who have not benefited from the help provided by shelters. The current study is limited by its cross-sectional design; that is, it cannot be concluded whether lack of social support exacerbates PTSD, or whether PTSD erodes social support. Moreover, our assessment of PTSD was based on self-report questionnaires and not on clinical interviews; it should be said, however, that this questionnaire is known to have high validity (Golding, 1999). And finally, the current study was designed, and most of the data were gathered, prior to the publication of the *DSM-V*, and prior to the updated PTSD diagnostic criteria, thereby limiting the applicability of the current findings.

An additional study is therefore recommended. More research is required among women reporting domestic violence victimization in the community at large, and not just among

those who are in shelters, and more research is required to further explore the dynamics between social support in the context of domestic violence and PTSD. Furthermore, additional research should also be conducted among women of Ethiopian ethnicity, in order to develop a better understanding of what personal and/or societal factors inhibited the emergence of PTSD symptoms in this sector, and to enhance the cross-cultural validity of the instruments used to measure PTSD.

REFERENCES

- Alexander, P., C. (2009). Childhood trauma, attachment, and abuse by multiple partners. *Psychological Trauma: Theory, Research, Practice, and Policy*, 1, 78–88. doi:10.1037/a001525
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*. (5th ed.). Washington, DC: Author.
- Astin, M. C., Oglan-Hand, S. M., & Foy, D. W. (2002). Trauma symptoms in preschool-age children exposed to domestic violence. *Journal of Interpersonal Violence*, 17, 150–164. doi:10.1177/0886260502017002003
- Bargai, N., Ben-Shakhar, G., & Shalev, A. Y. (2007). Posttraumatic stress disorder and depression in battered women: The mediating role of learned helplessness. *Journal of Family Violence*, 22, 267–275. doi:10.1007/s10896-007-9078-y
- Basoglu, M., & Salcioglu, E. (2011). *A mental healthcare model for mass trauma survivors: Control-focused behavioral treatment of earthquake, war, and torture trauma*. Cambridge, UK: Cambridge University Press.
- Ben-Porat, A. (2010). Connecting two worlds: Training social workers to deal with domestic violence against women in the Ethiopian community. *British Journal of Social Work*, 40(8), 2485–2501. <http://doi.org/10.1093/bjsw/bcq027>
- Bonomi, A. E., Thompson, R. S., Anderson, M., Reid, R. J., Carrell, D., Dimer, J. A., & Rivara, F. P. (2006). Intimate partner violence and women's physical, mental, and social functioning. *American Journal of Preventive Medicine*, 30, 458–466. doi:10.1016/j.amepre.2006.01.015
- Brewin, C. R., & Shapiro, D. A. (1984). Beyond locus of control: Attribution of responsibility for positive and negative outcomes. *British Journal of Psychology*, 75, 43–49. doi:10.1111/j.2044-8295.1984.tb02788.x
- Briere, J., & Jordan, C. E. (2009). Childhood maltreatment, intervening variables, and adult psychological difficulties in women: An overview. *Trauma, Violence & Abuse*, 10, 375–388. doi:10.1177/1524838009339757
- Briere, J., Kaltman, S., & Green, B. L. (2008). Accumulated childhood trauma and symptom complexity. *Journal of Traumatic Stress*, 21, 223–226. doi:10.1002/jts.20317
- Campbell, J. C., Webster, D. W., & Glass, N. (2009). The danger assessment: Validation of a lethality risk assessment instrument for intimate partner femicide. *Journal of Interpersonal Violence*, 24, 653–674. doi:10.1177/0886260508317180
- Clevenger, B. J. M., & Roe-Sepowitz, D. (2009). Shelter service utilization of domestic violence victims. *Journal of Human Behavior in the Social Environment*, 19(May 2013), 359–374. <http://doi.org/10.1080/10911350902787429>
- Cloitre, M., Stolbach, B. C., Herman, J. L., Kolk, B. V. D., Pynoos, R., Wang, J., & Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress*, 22, 399–408. doi:10.1002/jts.20444
- Cohen, C. (1997). Movement therapy as a bridge to biculturalization—Ethiopian immigrants in Israel. *The Arts in Psychotherapy*, 24, 281–289. doi:10.1016/S0197-4556(97)00036-1

- Coker, A. L., Watkins, K. W., Smith, P. H., & Brandt, H. M. (2003). Social support reduces the impact of partner violence on health: Application of structural equation models. *Preventive Medicine, 37*, 259–267. doi:10.1016/S0091-7435(03)00122-1
- Coker, A. L., Weston, R., Creson, D. L., Justice, B., & Blakeney, P. (2005). PTSD symptoms among men and women survivors of intimate partner violence: The role of risk and protective factors. *Violence and Victims, 20*, 625–643. doi:10.1891/0886-6708.20.6.62
- Devries, K. M., Mak, J. Y. T., Petzold, M., Child, J. C., Falder, G., Lim, S., . . . García-Moreno, C. (2013.6140.). The global prevalence of intimate partner violence against women. *Science (New York, N.Y.), 340*, 1527–8. <http://doi.org/10.1126/science.1240937>
- Dodson, T. S., & Beck, J. G. (2017). Posttraumatic stress disorder symptoms and attitudes about social support: Does shame matter? *Journal of Anxiety Disorders, 47*, 106–113. doi:10.1016/j.janxdis.2017.01.005
- Domhardt, M., Munzer, A., Fegert, J. M., & Goldbeck, L. (2015). Resilience in survivors of child sexual abuse: A systematic review of the literature. *Trauma, Violence, Abuse, 16*, 476–493. doi:10.1177/1524838014557288
- Dutton, D. G., & Painter, S. (1993). Emotional attachments in abusive relationships: a test of traumatic bonding theory. *Violence and Victims, 8*(2), 105–120.
- Edelstein, A. (2012). Cultural change, acculturation and femicide among Ethiopian immigrants in Israel. *Social Issues in Israel, 14*, 148–173.
- Eisikovits, Z., Winstok, Z., & Fishman, G. (2004). The first Israeli national survey on domestic violence. *Violence Against Women, 10*, 729–748. doi:10.1177/1077801204265549
- Elderton, A., Berry, A., & Chan, C. (2015). A systematic review of posttraumatic growth in survivors of interpersonal violence in adulthood. *Trauma, Violence, Abuse, 16*, 223–236.
- Eshel, N., Roiser, J. (2010). Reward and punishment processing in depression. *Biological Psychiatry, 68*, 118–124. doi:10.1016/j.biopsych.2010.01.027
- Eyal Assael, V. (2012). Domestic conflicts and violence among Ethiopian Immigrants (Beta Israel) in the village, during waiting period, and in Israel. In N. Grisaru & E. Witztum (Eds.), *Social, cultural and clinical aspects of Ethiopian Immigrants in Israel*. Beer-Sheva, Israel: Ben-Gurion University press.
- Field, A. (2009). *Discovering statistics using SPSS*, London: SAGE Publications Ltd.
- Garcini, L. M., Murray, K. E., Zhou, A., Klonoff, E. A., Myers, M. G., & Elder, J. P. (2016). Mental health of undocumented immigrants in the United States: A systematic review of methodology and findings. *Journal of Immigrant and Refugee Studies, 14*(1), 1–25. doi:10.1080/15562948.2014.998849
- Gleason, W. (1995). Children of battered woman: Developmental delays and behavioral dysfunction. *Violence and Victims, 10*, 153–160. doi:10.1891/0886-6708.10.2.153
- Golding, J. M. (1999). Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence, 14*, 99–132. doi:10.1023/A:1022079418229
- Graham-Berman, S. A., & Levendosky, A. A. (1998). Traumatic stress symptoms in children of battered woman. *Journal of Interpersonal Violence, 13*, 111–128. doi:10.1177/088626098013001007
- Gurin, P., Gurin, G., & Morison, B. M. (1978). Personal and ideological aspects of internal and external control. *Social Psychology, 41*, 275–296. doi:10.2307/3033581
- Haj-Yahia, M. M. (2002). Attitudes of Arab women toward different patterns of coping with wife abuse. *Journal of Interpersonal Violence, 17*(7), 721–745. doi:10.1177/0886260502017007002
- Harvey, M. R. (1996). An ecological view of psychological trauma and trauma recovery. *Journal of Traumatic Stress, 9*, 3–23. doi:10.1002/jts.2490090103
- Harvey, M. R., Liang, B., Harney, P. A., Koenen, K., Tummala-Narra, P., & Lebowitz, L. (2003). A multidimensional approach to the assessment of trauma impact, recovery and resiliency. *Journal of Aggression Maltreatment & Trauma, 6*, 87–109. doi:10.1300/J146v06n02_05

- Hinton, D. E., & Lewis-Fernández, R. (2011). The cross-cultural validity of posttraumatic stress disorder: Implications for DSM-V. *Depression and Anxiety, 28*, 783–801. doi:10.1002/da.20753
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*, 632–643. doi:10.1037/0022-3514.84.3.63
- Hobfoll, S. E., & Wolfish, S. (1984). Coping with a threat to life: A longitudinal study of self-concept, social support, and psychological distress. *American Journal of Community Psychology, 12*, 87–99. doi:10.1007/BF00896930
- Hughes, H. M., Cangiano, C., & Hopper, E. K. (2011). Profiles of distress in sheltered battered women: Implications for intervention. *Violence and Victims, 26*, 445–445. doi:10.1891/0886-6708.26.4.445
- John, R., Johnson, J.K., Kukreja, S., Found, M., & Lindow, S.W. (2004). Domestic violence: Prevalence and association with gynaecological symptoms. *International Journal of Obstetrics and Gynaecology, 111*. doi: 10.1111/j.1471-0528.2004.00290.x
- Karlsson, J., Sjöström, L., & Sullivan, M. (1995). Swedish obese subjects (SOS): A intervention study of obesity. Measuring psychological factors and health by means of short-form questionnaires: Results from a method study. *Journal of Clinical Epidemiology, 48*, 723–857. doi:10.1016/0895-4356(94)00196-W
- Kay, A. C., Sullivan, D., & Landau, M. J. (2015). Psychological importance of beliefs in control and order: Historical and contemporary perspectives in social and personality psychology. In M. Mikulincer & P. R. Shaver (Eds.), *APA handbook of personality and social psychology* (Vol. 1, pp. 309–337). Washington, DC: American Psychological Association.
- Kelly, B. J., & Johnson, M. P. (2008). Differentiation among types of intimate partner violence: Reserch update and implications for interventions. *Family Court Review, 46*, 476–499. doi:10.1111/j.1744-1617.2008.00215.x
- Kemp, A., Rawlings, E. I., & Green, B. L. (1991). Post-traumatic stress disorder (PTSD) in battered women: A shelter sample. *Journal of Traumatic Stress, 4*, 137–148. doi:10.1002/jts.2490040111
- Kaniasty, K., & Norris, F. H. (1995). Mobilization and deterioration of social support following natural disasters. *Current Directions in Psychological Science, 4*(3), 94–98. doi:10.1111/1467-8721.ep10772341
- Kaniasty, K., & Norris, F. H. (2008). Longitude linkage between perceived social support and post-traumatic stress symptoms: Sequential roles of social causation and social selection. *Journal of Traumatic Stress, 21*(3), 274–281. doi:10.1002/jts.20334
- Khadra, C., Wehbe, N., Lachance, F. J., Skaff, W., & Nehmé, M. (2015). Symptoms of post-traumatic stress disorder among battered women in Lebanon. *Journal of Interpersonal Violence, 30*, 2. doi:10.1177/0886260514534774
- Lachman, M. E., & Weaver, S. L. (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology, 74*, 763–773. doi:10.1037/0022-3514.74.3.763
- Lahey, B., & Cohen, S. U. (2000). Social support theory and measurement. In S. U. Cohen, G. Lynn, & B. H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 29–52). New York, NY: Oxford University Press.
- Lee, J., Pomeroy, E. C., & Bohman, T. M. (2007). Intimate partner violence and psychological health in a sample of Asian and Caucasian women: The roles of social support and coping. *Journal of Family Violence, 22*(8), 209–720. doi:10.1007/s10896-007-9119-6
- Lilly, M., Howell, K. H., & Graham-Bermann, S. (2014). World assumptions, religiosity, and PTSD in survivors of intimate partner violence. *Violence Against Women, 21*(1), 87–104. doi:10.1177/1077801214564139
- Lissek, S., & van Meurs, B. (2015). Learning models of PTSD: Theoretical accounts and psychobiological evidence. *International Journal Psychophysiology, 98*(3), 594–605.

- Maes, M., Delmeire, L., Mylle, J., & Altamura, C. (2001). Risk and preventive factors of post-traumatic stress disorder (PTSD): Alcohol consumption and intoxication prior to a traumatic event diminishes the relative risk to develop PTSD in response to that trauma. *Journal of Affective Disorders*, *63*, 113–121. doi:10.1016/S0165-0327(00)00173-7
- Maier, S. F., & Seligman, M. E. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology*, *105*, 3–46. doi:10.1037/0096-3445.105.1.3
- Maier, S. F., & Watkins, L. R. (2005). Stressor controllability and learned helplessness: The roles of the dorsal raphe nucleus, serotonin, and corticotropin-releasing factor. *Neuroscience and Biobehavioral Reviews*, *29*, 829–841. doi:10.1016/j.neubiorev.2005.03.02
- Mertin, P., & Mohr, P. B. (2001). A follow-up study of posttraumatic stress disorder, anxiety and depression, in Australian victims of domestic violence. *Violence and Victims*, *16*, 545–654.
- Mikulincer, M., & Shaver, P. (2015). *Attachment in adulthood: Structure, dynamics and change*. New York, NY: The Guilford Press.
- Nawijn, L., van Zuiden, M., Frijling, J. L., Koch, S. B. J., Veltman, D. J., & Olf, M. (2014). Reward functioning in PTSD: A systematic review exploring the mechanisms underlying anhedonia. *Neuroscience and Biobehavioral Reviews*, *51*, 189–204. doi:10.1016/j.neubiorev.2015.01.019
- Nickerson, A., Creamer, M., Forbes, D., McFarlane, A. C., O'Donnell, M. L. A., Silove, D., . . . Bryant, R. A. (2017). The longitudinal relationship between post-traumatic stress disorder and perceived social support in survivors of traumatic injury. *Psychological Medicine*, *47*(1), 115–126. doi:10.1017/S0033291716002361
- Norris, F. H., & Kaniasty, K. (1996). Received and perceived social support in times of stress: A test of the social support deterioration deterrence model. *Journal of Personality and Social Psychology*, *71*(3), 498–511. doi:10.1037/0022-3514.71.3.498
- Pinna, K. L. M., Johnson, D. M., & Delahanty, D. L. (2014). PTSD, comorbid depression, and the cortisol waking response in victims of intimate partner violence: Preliminary evidence. *Anxiety, Stress, & Coping*, *27*(3), 253–269. doi:10.1080/10615806.2013.852185
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, *19*, 2–21. doi:10.2307/213631
- Perez, S., Johnson, D. M., & Wright, C. V. (2012). The attenuating effect of empowerment on IPV-related PTSD symptoms in battered women living in domestic violence shelters. *Violence Against Women*, *18*, 102–117. doi:10.1177/107780121243734
- Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic identity, immigration and well-being: An interactional perspective. *Journal of Social Issues*, *57*(3), 493–510. doi:10.1111/0022-4537.0022
- Pill, N., Day, A., & Mildred, H. (2017). Trauma responses to intimate partner violence: A review of current knowledge. *Aggression and Violent Behavior*, *34*(2016), 178–184. <http://doi.org/10.1016/j.avb.2017.01.014>
- Ponizovsky, A., Ginath, Y., Durst, R., Wondimeneh, B., Safro, S., Minuchin-Itzigson, S., . . . Ritsner, M. (1998). Psychological distress among Ethiopian Russian Jewish immigrants to Israel: A cross-cultural study. *International Journal of Social Psychiatry*, *44*, 35–45. doi:10.1177/00207640980440010
- Salcioglu, E., Urhan, S., Pirinccioglu, T., & Aydin, S. (2017). Anticipatory fear and helplessness predict PTSD and depression in domestic violence survivors. *Psychological Trauma: Theory, Research, Practice, and Policy*, *9*(1), 117–125. doi:10.1037/tra0000200
- Schumm, J. A., Briggs-Phillips, M., & Hobfoll, S. E. (2006). Cumulative interpersonal traumas and social support as risk and resiliency factors in predicting PTSD and depression among inner-city women. *Journal of Traumatic Stress*, *19*(6), 825–836. doi:10.1002/jts.20159

- Solomon, Z., Dekel, R., & Zerach, G. (2009). Posttraumatic stress disorder and marital adjustment: The mediating role of forgiveness. *Family Process, 48*, 546–558. doi:10.1111/j.1545-5300.2009.01301.x
- Solomon, Z., & Horesh, D. (2007). Changes in diagnostic criteria for PTSD: Implications from two prospective longitudinal studies. *American Journal of Orthopsychiatry, 77*, 182–188. doi:10.1037/0002-9432.77.2.182
- Soskolne, V., & Manor, O. (2009). Health inequalities in Israel: Explanatory factors of socio economic inequalities in self-rated health and limiting longstanding illness. *Health & Place, 16*, 242–251. doi:10.1016/j.healthplace.2009.10.00
- Walker, E. A. (2016). *The battered woman syndrome* (Rev ed). New York, NY: Springer Publishing Company.
- Youngmann, R. (2008). Emotional distress and utilization of mental health services among Ethiopian immigrants in Israel. In N. Grisaru & E. Witztum (Eds.), *Social, cultural and clinical aspects of Ethiopian Immigrants in Israel*. Beer-Sheva, Israel: Ben-Gurion University Press.
- Youngmann, R., Zilber, N., Kaveh, N., Zere, M., Workneh, F., Bekele, Y., & Giel, R. (2002). Development of a culturally sensitive psychiatric screening instrument for detecting emotional problems among Ethiopian immigrants in Israel. *Harefua, 141*, 10–16.

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