

The Contribution of Maternal Care and Control to Adolescents' Adjustment Following War

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Abstract

This study examined the contribution of maternal bonding to the adjustment of Israeli adolescents following the 2006 Lebanon War. In all, 2,858 seventh and eighth graders who lived in areas that were exposed to missile attacks completed the Parental Bonding Instrument (assessing maternal care and control) and questionnaires evaluating post-traumatic stress (PTS), psychological distress, and life satisfaction. Beyond the contribution of war exposure, maternal control was associated with adolescents' greater distress, more PTS symptoms, and lower life satisfaction. Maternal care contributed to adolescents' lower distress and greater life satisfaction. Furthermore, maternal care moderated the association between adolescents' war exposure and their distress: Among adolescents who were highly exposed to war, those who perceived their mothers as less caring exhibited greater distress than equally traumatized adolescents who perceived their mothers as more caring. The discussion deals with the findings in light of the literature regarding parenting and trauma.

Keywords

maternal care and control, war, adolescents, PTSD, life satisfaction

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Introduction

In the last few decades, wars and terror attacks have become widespread around the world. Consequently, a great deal of scientific effort has gone into the examination of psychological harm caused to children and adolescents as a result (e.g., Comer & Kendall, 2007; Joshi & O'Donnell, 2003; Masten & Narayan, 2012; Pine, Costello, & Masten, 2005; Sagi-Schwartz, 2008). The most common response reported has been post-traumatic stress disorder (PTSD). In addition, the literature documents symptoms of distress such as anxiety and depression (e.g., Barile, Grogan, Henrich, Brookmeyer, & Shachar, 2012; Comer & Kendall, 2007; La Greca, 2007; Sagi & Braun-Lewensohn, 2009) and lack of life satisfaction (Besser & Neria, 2009; Shamai & Kimhi, 2006) among adolescents in the aftermath of war.

In an attempt to understand the large variance in individuals' mental health outcomes following trauma, one must take into consideration the existence of earlier traumatic experiences (T. Lavi, Green, & Dekel, 2013; Pfefferbaum, 1997) as well as characteristics of the current event and environmental factors such as familial resources (Brock, 2002; Harvey, 1996; Nader, 2008). The nature of exposure characteristics to the traumatic event itself has been thoroughly investigated (e.g., Ajdukovic & Ajdukovic, 1998; Barile et al., 2012; Pat-Horenczyk et al., 2009; Punamaki, Qouta, & El Sarraj, 2001); variables such as the number of violent events to which the individual has been exposed, their intensity or duration, and the individual's proximity to them have been reported to exert a heavy toll on an adolescent's adjustment (Schiff, 2006). Much less is known, however, about the associations between familial factors such as parenting characteristics and adolescents' adaptation to traumatic situations. Thus, the current study aimed to broaden the discussion regarding the contribution of maternal bonding to adolescents' adaptation in the aftermath of war. Our first goal was to examine the direct contribution of maternal bonding, as manifested by aspects of care and control, to adolescents' PTSD, psychological distress, and life satisfaction in the aftermath of war. The second goal was to test the moderating role of maternal bonding: that is, to see whether maternal bonding might buffer the impact of earlier traumatic events and war exposure on adolescents' adjustment.

Parenting During Adolescence

Parenting has long been acknowledged to be of great importance to children's mental health (Freud, 1917). Bowlby (1969) regarded the quality of the parent-infant bond as a main predictive factor of the child's mental health in the future. The influence of parenting during adolescence, however, has always been a subject of scientific controversy.

Piaget (1932/1965) and several classical psychoanalytic theorists (e.g., Blos, 1962; Erikson, 1959; Marcia, 1980) have emphasized the importance of giving independence to adolescents in order to allow them to disengage emotionally from the family, as peer groups progressively become the predominant force in their lives. In contrast, family theorists have argued that adolescents should not distance themselves from their families in order to successfully accomplish the transition from childhood to adolescence. Specifically, they believe that parental support remains the principal component of healthy development upon adolescence, as it enhances self-confidence, self-regulation, and exploratory behavior (Baumrind, 1987, 1991; Hill, 1980). This latter view is supported by research which points to parents' direct and indirect influences on the behavior and mental health of teenagers (Brown, Mounts, Lamborn, & Steinberg, 1993; Steinberg, 2001). Contemporary literature has established the important role that parents play in the enhancement of adolescents' well-being and the decrease of their likelihood of engaging in risk behaviors (Longmore, Manning, & Giordano, 2013).

The recognition that parenting plays a major role in the adjustment of children and adolescents has led to a wide-scale investigation of various child-rearing behaviors. The effort to translate the concept of parenting into operative structures has yielded two main dimensions of warmth and control (Winefield, Goldney, Tiggemann, & Winefield, 1989), and different combinations of these dimensions are seen as forming distinct parenting styles. The most common perspectives are those that were developed by Maccoby and Martin (1983) and by Parker, Tupling, and Brown (1979). The first model focuses on "responsiveness" and "demandingness," while the second emphasizes "care" and "control/over-protectiveness" as the predominant aspects of parenting. The current study is based on the latter model (Parental Bonding or PB) as it has yielded the most widely used empirical measure of parental behaviors in general (Enns, Cox, & Clara, 2002) and of parental behaviors during times of trauma in particular (Bokszczanin, 2008).

The first dimension of PB, parental care, reflects an approach to parenting that values the child's emotions. This dimension includes elements such as active listening, caring, appreciation, reinforcement of desirable behavior, and parental involvement in the child's life. Regarding the second dimension, parental control, the positive aspects of it are reflected in setting clear boundaries, parental supervision, and encouragement of the child's independence (Steinberg, Lamborn, Dornbusch, & Darling, 1992). However, it is worth noting that this second dimension—control—generally has a negative connotation under the PB model, more than it has under other models such as Baumrind's (Pedersen, 1994). The negative aspects of control are reflected in excessive monitoring of the child's daily routine and include coercive

discipline, psychological control, the withholding of love, and expressions of disappointment that cause the child to feel anxiety, isolation, and embarrassment (Barber, 1996; Peterson & Rollins, 1987).

Results from several studies that have been conducted among adolescents over the years point to the associations between low levels of parental care, high levels of parental control, and poor mental health. For example, low care and high control were associated with adolescents' psychological distress (Shams & Williams, 1995), depression, anxiety and suicidal thoughts and behavior (Diamond et al., 2005; Freudenstein et al., 2011; Pedersen, 1994), oppositional and behavioral disorders (Rey & Plapp, 1990), homelessness and runaway behavior (McGarvey et al., 2010; Schweitzer, Hier, & Terry, 1994), symptoms of eating disorders (Swanson et al., 2010), and low levels of well-being (Canetti, Bachar, Galili-Weisstub, De Nour, & Shalev, 1997).

In the current study, we expected to find a similar pattern of findings regarding adolescents' adjustment following trauma. Specifically, we postulated that maternal *care* would contribute positively to adolescents' post-war adjustment and that maternal *control* would contribute negatively to adolescents' post-war adjustment.

Parenting in the Shadow of Trauma

In the shadow of the destructive outcomes resulting from trauma, parenting often becomes an especially challenging task. Parents, who are also exposed to the traumatic event's consequences, must be capable of regulating their personal emotions in order to help their children reflect upon their own traumatic experiences; they must soothe and support their child on the one hand, while facilitating and accepting his/her separateness on the other (Cohen, 2009). It has been shown that parents' coping patterns, actual and perceived reactions, and practices and supervision following trauma are directly associated with children's and adolescents' post-trauma mental health (Nader, 2008; Pfefferbaum, 1997).

As Masten and Narayan (2012) emphasize in their thorough review, parents can serve as protective or promotive factors in children's and adolescents' post-trauma adjustment. Therefore, an evolving field of research involves the examination of diverse parental factors (such as parental coping abilities and mental health) as moderators in the relationship between child psychopathology and various stressors (Grant et al., 2006; Nader, 2008), particularly the stressor of disaster exposure (La Greca, Silverman, Vernberg, & Roberts, 2003). Nevertheless, the moderating contribution of certain parenting styles and practices, which are thought to be salient components in the process of children's recovery after mass trauma (Gewirtz, Forgatch, & Wieling, 2008), has been investigated in only a very few studies.

To date, most of the existing studies regarding parental styles and practices as moderators of the association between trauma exposure and children's adjustment have focused on samples of young children. These studies pointed to the protective role played by warm and affectionate parenting (I. Lavi & Slone, 2012; Punamaki, Qouta, & El Sarraj, 1997) as well as the risk factor that over-protective parenting posed in children's post-trauma adjustment (I. Lavi & Slone, 2012; McFarlane, 1987). Specifically, I. Lavi and Slone (2012) found that maternal warmth was related to low levels of behavioral and social difficulties even for children reporting a high impact of exposure. Children with loving, affectionate, and caring parents were less likely to be affected by political violence in comparison with children who had cold and distant parents.

Very few attempts have been made to address PB and adolescents' adjustment to trauma, and those studies which do exist have only investigated recovery from the specific kind of trauma experienced in the wake of natural disasters. One study conducted in the aftermath of a deadly earthquake found that higher parental care and lower parental control increased adolescents' resilience and protected them against development of PTSD symptoms (Sun, Fan, Zheng, & Zhu, 2012). Similarly, Bokszczanin (2008) revealed that parents could actually undermine adolescents' resilience through too much parental control, that is, over-protectiveness. She found a positive correlation between levels of parental over-protectiveness and PTSD symptoms among adolescents who had lived through a flood. She also showed that parental control moderated the association between flood exposure and post-disaster distress. Among adolescents who were highly exposed to the flood, those with parents who were more protective exhibited higher levels of PTSD symptoms than those with parents who were less protective.

Based on these findings, in the current study we expected maternal *care* to protect against the negative contribution of war exposure and/or previous trauma to adolescents' adjustment. By contrast, we expected maternal *control* to exacerbate the negative contribution of war exposure and/or previous trauma to adolescents' adjustment.

The Present Study

There is a dearth of data regarding the direct and moderating contribution of parental styles and practices to adolescents' adjustment in the aftermath of trauma. To the best of our knowledge, there are no published works regarding parental styles and adolescents' adjustment to war; the current study thus aimed to fill this gap. Specifically, we tested the contribution of maternal bonding to Israeli adolescents' adjustment 8 to 10 months after the end of the

2006 Lebanon War, a 33-day military conflict between Hezbollah paramilitary forces in Lebanon and the Israeli Defense Forces. An additional contribution of the present study lies in its large sample and in the use of several dependent measures for adolescents' adjustment, both specifically in regard to the trauma of the actual war itself (PTSD) and broader factors of adjustment (general psychological distress and life satisfaction).

The study's first aim was to examine the direct contribution of maternal bonding to adolescents' adjustment to war, beyond the contribution of earlier traumatic events and war exposure. The second aim was to test whether maternal bonding moderated the associations between both earlier trauma and war exposure to adolescents' adjustment.

On the basis of literature suggesting that females tend to perceive their parents as more caring than males do (Canetti et al., 1997; Pedersen, 1994), we predicted that the female adolescents in our sample would report receiving higher maternal care than would the males. We also expected differences between males' and females' perceived maternal control, but due to inconsistent former findings (Pedersen, 1994; Shams & Williams, 1995), we could not predict the directionality of those differences. We further hypothesized that earlier trauma and increased war exposure would be associated with participants' adjustment difficulties, that is, higher levels of psychological distress (PTSD and general distress) and lower levels of life satisfaction.

With regard to maternal bonding, we postulated that maternal care would make a significant contribution to adolescents' adjustment to war, meaning that higher maternal care would be associated with lower levels of psychological distress (PTSD and general distress) and higher levels of life satisfaction. We also expected that the associations between adolescents' adjustment difficulties and both earlier trauma and higher war exposure would be stronger for those who perceived their mothers as less caring. In addition, we expected maternal control to make a significant contribution to adolescents' adjustment to war: High control would be associated with higher levels of psychological distress and lower levels of life satisfaction. Finally, we hypothesized that the associations between adolescents' adjustment difficulties and both earlier trauma and higher war exposure would be stronger for those who perceived their mothers as more controlling.

Method

Participants and Procedures

The study participants were comprised of 2,858 seventh and eighth graders. Their ages ranged from 12 to 15 ($\bar{X} = 13.5$, $SD = 0.65$), and 52.6% of the sample were females. Most of the participants (90.5%) were Israeli-born and

lived in urban environments (81.9%). In total, 96.7% of the sampled adolescents had at least one sibling. Most of the participants' parents were married (84.1%), and 94.3% of the fathers held partial or full-time jobs, and 86.7% of the mothers were fully or partially employed.

After obtaining approval from the chief scientist at the Ministry of Education, managers of the regional educational psychological services were asked to invite high school principals to participate in the study. Twenty regional high schools, located in both rural and urban parts of northern Israel, were approached. Sixteen school principals originally agreed to participate in the study. Ultimately, however, due to time constraints as the year came to an end, questionnaires were only distributed throughout 14 of those schools. The participating schools had between 4 and 17 seventh- and eighth-grade classes, yielding a total of 125 high school classes in all. The questionnaires were administered 8 to 10 months after the war by trained social workers and social science students who had participated in a training session.

All in all, data were collected from 3,241 pupils. Three hundred eighty-three respondents were excluded from the study's sample due to the following criteria: pupils who did not fill out the questionnaires on their own, and pupils who had been physically wounded during the war, and were thus especially vulnerable (Neria, DiGrande, & Adams, 2011; Whalley & Brewin, 2007). Therefore, the final sample included 2,858 participants.

A chi-square analysis revealed that in the excluded group ($n = 383$), a significantly larger percentage of pupils were born outside of Israel (36.5%) and a significantly smaller percentage of their parents were married (75.2%) than in the included group: $N = 2,858$, 9.5%, $\chi^2(2) = 227.51$, $p < .001$; 84.1%, $\chi^2(3) = 39.54$, $p < .001$, respectively. No other demographic differences were found among the two groups.

Regarding missing data, 381 pupils had missing values. In order to improve the accuracy and power of the analysis, missing data were handled by the use of multiple imputation (Enders, 2010). We used Little's missing completely at random test (R. J. A. Little, 1998) which did not reach significance, suggesting that data were missing completely at random. In keeping with T. D. Little (2013), we used only single imputation, as each of the variables had only around 5% of missing values.

Measures

Socio-demographic background. This questionnaire included questions regarding gender, class, age, number of siblings, parents' marital status and occupation, current address, country of birth.

Earlier traumatic life events. Participants were asked to indicate whether they had experienced a traumatic event in the past (specific examples, such as a car accident or a terrorist incident, were given for the purpose of clarification).

Region of exposure. Participants were divided into four groups based on their exposure to violent attacks, as manifested by the number of missiles that had fallen in the school's region during the entirety of the war. Data regarding the number of missiles that had fallen was provided by the Israel Ministry of Foreign Affairs (2006). The four groups thus created were (a) low exposure region ($n = 271$, categorized by only a few missiles); (b) medium exposure region ($n = 1,288$, categorized by 100-200 missiles); (c) high exposure region ($n = 497$, categorized by 400-500 missiles); and (d) extreme exposure region ($n = 802$, categorized by more than 800 missiles).

Personal direct exposure. Participants were asked to indicate the number of times they saw and/or heard a missile fall in their surroundings. Based on their reports, participants were divided into two exposure groups, thus creating a dichotomous variable with these two levels: (a) no direct exposure ($n = 477$) and (b) direct exposure, that is, exposure to one missile or more ($n = 2,381$).

Parental Bonding Instrument (PBI). The PBI was developed by Parker et al. (1979) as a measure for assessing the quality of the parent-child relationship (in this particular study, the mother-child relationship), as perceived by the children. The questionnaire consisted of 25 items relating to two dimensions seen as central to the parent-child relationship. The first dimension was "care," which refers to the degree of warmth, empathy, and closeness versus distance, indifference, and emotional neglect. The second dimension, "control," referred to the degree of parental control and ranged from over-protectiveness, intrusiveness, and impairment of autonomy to encouragement of independence, respect for personal space, and facilitation of autonomy. Participants were asked to rate the extent to which each item reflected their perceptions of their mother, on a 4-point Likert scale, ranging from 1 (*very appropriate*) to 4 (*very inappropriate*). The scale was found to have high internal and test-retest validity (Parker, 1986, 1989; Torresani, Favaretto, & Zimmerman, 2000; Warner & Atkinson, 1988) and long-term stability over time (Wilhelm, Niven, Parker, & Hadzi-Pavlovic, 2005). The PBI's Hebrew version has been used in several Israeli trauma studies (e.g., Dinshtein, Dekel, & Polliack, 2011). In the current study, the Cronbach's alpha values were .88 for the "care" dimension and .72 for the "control" dimension.

PTSD. PTSD was measured using the Children's Post-Traumatic Stress Reaction Index (CPTS-RI; Frederick, Pynoos, & Nader, 1992). This questionnaire has 20 items and, as it is based on *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) PTSD symptoms, it allows for the examination of both the intensity and the number of post-traumatic stress (PTS) symptoms. Subjects indicated their responses on a 5-point Likert scale, with scores ranging from 0 (*not at all*) to 4 (*all the time*). The Global Symptom Score consists of the sum of the scores with possible scores ranging from 0.00 to 80.00. The Hebrew translation of the CPTS-RI has been widely used in trauma studies on Israeli youth and has high reliability and validity (e.g., Schwarzwald, Weisenberg, Solomon, & Waysman, 1997; Solomon & Lavi, 2005). Cronbach's alpha in the current study was .88.

Psychological distress. Distress was measured using the Brief Symptoms Inventory (BSI; Derogatis & Melisaratos, 1983). The BSI is a self-report symptom inventory designed to assess the psychological symptom status among clinical and non-clinical samples. Its 53 items reflect nine primary symptom dimensions: anxiety, somatization, social alienation, paranoid ideation, obsessive-compulsive symptoms, hostility, phobias, depression, and interpersonal sensitivity. Each item is rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The final score is summed up into a General Symptom Index (GSI) so that the GSI score represents the subjects' level of distress. The BSI has been used in several Israeli studies of trauma (e.g., T. Lavi & Solomon, 2005). Cronbach's alpha for the total score found in the current study was .96.

Life satisfaction. This item was measured using a single 11-point Likert scale ranging from 0 to 10. The respondents were asked the following question: "If '10' is the best possible life for you and '0' is the worst possible life for you, how in general would you rate your life at the moment?" This measure was adopted from the Health Behavior in School-Aged Children (HBSC) questionnaire, which was previously tested on a larger index in Israel (Harel-Fisch et al., 2010).

Statistical Analysis

First, we compared boys and girls in the two measures of PBI: care and control. Second, we assessed the correlations between the study variables. Third, in order to examine the contribution of maternal care and control to adolescents' PTSD, GSI, and life satisfaction in the aftermath of war, we performed

three hierarchical regressions, with four steps each. In each of the three regressions, the first step included the background variables of age, gender, and the experience of earlier traumatic events. In the second step, we entered the exposure characteristics which were found in association with at least one of the dependent variables, based on the pre-assessed correlations (i.e., only the variable of personal direct exposure was entered). In the third step, the variables of maternal care and maternal control were entered. In the fourth step, the interactions between earlier traumatic events, direct personal exposure, and each of the two dimensions of PB were entered. The interactions were analyzed according to procedures outlined by Preacher, Curran, and Bauer (2006), developed specifically for two-way regression models.

Results

Comparing the Level of Maternal Bonding Between the Genders

Two simple *t*-tests revealed that the difference between the genders in relation to maternal care was significant, $t(2856) = 6.25, p < .001$: Girls reported significantly higher levels of perceived care ($\bar{X} = 3.56, SD = 0.51$) than the boys ($\bar{X} = 3.44, SD = 0.54$). The difference in maternal control was not significant, $t(2856) = 0.54$, girls: $\bar{X} = 1.75, SD = 0.43$; boys: $\bar{X} = 1.76, SD = 0.44$.

Correlations

Table 1 presents the correlations between the study variables and the measures of adjustment. Participants' age and gender were correlated with PTSD: that is, girls and younger adolescents were at greater risk of developing post-traumatic symptoms. Girls also had higher GSI scores and reported less life satisfaction. The existence of early trauma was correlated with higher levels of PTSD and GSI and with lower levels of life satisfaction. The two measures of exposure were found in correlation, while personal direct exposure was found to be positively correlated with PTSD. Higher levels of perceived maternal care were associated with lower GSI levels and with more life satisfaction. High maternal control was found to correlate with more symptoms of PTSD and GSI and with less life satisfaction.

Multiple Variables Analysis: The Contribution of PB to Adolescents' Adjustment

Table 2 presents the *b*, *SD b*, and the beta coefficients of each of the four steps for each one of the regressions.

Table 1. Pearson Correlations Among the Study's Variables ($N = 2,858$).

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------|--------|--------|---------|---------|--------|---------|---------|---------|---------|----|
| 1. Age | 1 | | | | | | | | | |
| 2. Gender | -.02 | 1 | | | | | | | | |
| 3. Early trauma | -.02 | .00 | 1 | | | | | | | |
| 4. Region of exposure | .08*** | -.04* | -.05** | 1 | | | | | | |
| 5. Personal direct exposure | .02 | -.01 | .00 | .11*** | 1 | | | | | |
| 6. Maternal care | -.03 | .12*** | -.02 | .05* | .03 | 1 | | | | |
| 7. Maternal control | -.02 | -.01 | .07*** | -.09*** | .00 | -.49*** | 1 | | | |
| 8. PTSD | -.05** | .25*** | .11*** | .00 | .09*** | -.04* | .17*** | 1 | | |
| 9. GSI | .00 | .19*** | .10*** | -.03 | .03 | -.22*** | .30*** | .66*** | 1 | |
| 10. Life satisfaction | .00 | -.05** | -.09*** | .03 | -.02 | .33*** | -.32*** | -.31*** | -.45*** | 1 |

Note. Gender (0 = male, 1 = female). PTSD = post-traumatic stress disorder; GSI = General Symptom Index.

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

PTS. The total set of the independent variables explained 11.2% of the variance, $F(6, 2857) = 59.713$, $p < .001$. As can be seen in the first step, gender, age, and earlier traumatic life events contributed significantly to PTS symptoms. Girls, younger adolescents, and those who experienced traumatic events before the war reported higher levels of PTS. Level of exposure (Step 2) also contributed to PTS symptoms, so that adolescents who were directly exposed to missiles reported higher levels of PTS. Regarding the maternal dimensions, only maternal control was found to have made a significant contribution. Higher maternal control was found to be associated with higher PTS. In the fourth step, none of the interactions reached significance.

GSI. The total set of the independent variables explained 14.9% of the variance, $F(7, 2857) = 70.554$, $p < .001$. As can be seen in Table 2, similar to the earlier regression, gender and earlier traumatic life events contributed significantly to GSI symptoms. Girls and adolescents who experienced additional traumatic events before the war reported higher levels of GSI. In contrast with the earlier regression, participants' direct exposure was not found to be associated with GSI. Regarding the maternal dimensions, both maternal care and control were found to have made significant contributions. Higher maternal care was found to be associated with lower GSI, whereas higher maternal control was found to be associated with higher GSI. In the fourth step, only the interaction between participants' direct exposure and their perceived

Table 2. Multiple Variables Analysis.

| Independent variables | PTSD | | | GSI | | | Life satisfaction | | |
|--|------|------|--------|------|------|---------|-------------------|------|---------|
| | B | SD b | β | b | SD b | β | b | SD b | β |
| Step 1 | | | | | | | | | |
| Gender | .28 | .02 | .25*** | .24 | .02 | .19*** | -.18 | .07 | -.05** |
| Age | -.04 | .02 | -.04* | .01 | .02 | .01 | -.02 | .05 | -.01 |
| Earlier traumatic events | .20 | .03 | .11*** | .22 | .04 | .10*** | -.52 | .11 | -.09*** |
| Step 2 | | | | | | | | | |
| Gender | .28 | .02 | .25*** | .24 | .02 | .19*** | -.18 | .07 | -.05** |
| Age | -.04 | .02 | -.05* | .01 | .02 | .01 | -.02 | .05 | -.01 |
| Earlier traumatic events | .20 | .03 | .11*** | .22 | .04 | .10*** | -.52 | .11 | -.09*** |
| Personal direct exposure | .13 | .03 | .09*** | .05 | .03 | .03 | -.10 | .09 | -.02 |
| Step 3 | | | | | | | | | |
| Gender | .28 | .02 | .25*** | .26 | .02 | .20*** | -.29 | .06 | -.08*** |
| Age | -.04 | .02 | -.04* | .01 | .02 | .01 | -.01 | .05 | -.00 |
| Earlier traumatic events | .18 | .03 | .10*** | .18 | .04 | .08*** | -.40 | .11 | -.07*** |
| Personal direct exposure | .13 | .03 | .09*** | .06 | .03 | .04* | -.14 | .08 | -.03 |
| Maternal care | .01 | .02 | .01 | -.16 | .02 | -.13*** | .82 | .07 | .24*** |
| Maternal control | .21 | .03 | .17*** | .34 | .03 | .23*** | -.82 | .08 | -.20*** |
| Step 4 | | | | | | | | | |
| Gender | .27 | .02 | .25*** | .26 | .02 | .20*** | -.29 | .06 | -.08*** |
| Age | -.04 | .02 | -.04* | .01 | .02 | .01 | -.01 | .05 | -.00 |
| Earlier traumatic events | .17 | .03 | .09*** | .18 | .04 | .08*** | -.40 | .10 | -.07*** |
| Personal direct exposure | .13 | .03 | .09*** | .06 | .03 | .03 | -.15 | .08 | -.03 |
| Maternal care | .03 | .02 | .03 | .00 | .05 | .00 | .82 | .07 | .24*** |
| Maternal control | .21 | .03 | .17*** | .33 | .03 | .23*** | -.82 | .08 | -.20*** |
| Personal direct exposure × Maternal care | | | | -.10 | .03 | -.14*** | | | |

Note. For each one of the dependent variables, four interactions were tested: "Personal direct exposure × Maternal care," "Personal direct exposure × Maternal control," "Earlier traumatic events × Maternal care," "Earlier traumatic events × Maternal control." All interactions besides the one presented in the table did not reach statistical significance. PTSD = post-traumatic stress disorder; GSI = General Symptom Index. **p* < .05. ***p* < .01. ****p* < .001.

maternal care was found significant. Probing this interaction revealed that while the positive association between exposure and GSI among those with

low maternal care was significant ($b = .16$), $t(2850) = 4.02$, $p = .001$, this association among those with high maternal care was not significant ($b = .04$), $t(2850) = 1.10$, *n.s.*

Life satisfaction. The total set of the independent variables explained 15.5% of the variance, $F(6, 2857) = 87.533$, $p < .001$. As can be seen in Table 2, gender and previous trauma contributed significantly to life satisfaction. Girls reported lower levels of life satisfaction than the boys, and adolescents who had experienced other traumatic events before the war also reported lower levels. Personal direct exposure made no significant contribution to life satisfaction. Regarding the maternal dimensions, both care and control were found to have made a significant contribution: Higher maternal care was found to be associated with higher life satisfaction, whereas higher maternal control was found to be associated with lower life satisfaction. None of the interactions were significant.

Discussion

This study focused on the contribution of maternal bonding to Israeli adolescents' adjustment following the 2006 Lebanon War as manifested in their post-traumatic symptoms, levels of distress, and their general life satisfaction.

First, we tested the contribution of war exposure and the existence of earlier trauma to adolescents' adjustment. Two aspects of exposure were examined, namely, region of exposure and personal direct exposure. The only significant correlation found was the expected positive association between direct exposure and PTS symptoms. In this respect, our results add to the well-established literature regarding the important role played by exposure characteristics in the development of PTSD among adolescents (e.g., Ajdukovic & Ajdukovic, 1998; Herman, 1997; Punamaki et al., 2001, Schiff, 2006), and replicates the findings of a former study conducted on Israeli citizens following the 2006 Lebanon War, which pointed to a similar association between direct exposure and adolescents' PTSD (T. Lavi et al., 2013). Previous trauma was also found to be a relevant variable in adolescents' adjustment following war, as indicated by its significant associations with all three dependent measures. Specifically, the existence of earlier traumatic events was correlated with higher levels of PTSD, more psychological distress, and lower life satisfaction. These findings may support the "vulnerability hypothesis" in accordance with other studies which showed that experiencing previous trauma enhanced adolescents' risk of exhibiting

distress and severe PTSD symptoms (Copeland, Keeler, Angold, & Costello, 2007; T. Lavi et al., 2013; Solomon & Laufer, 2004).

One of the study's aims was to examine the direct contribution of maternal bonding to adolescents' adjustment to war. As can be concluded from the results of the hierarchical regression, maternal bonding was found to be meaningful for adolescents' adjustment beyond the mere contribution of the traumatic event's exposure characteristics. As hypothesized, maternal control was significantly correlated with all three dependent variables, meaning that higher maternal control was associated with higher PTSD symptoms, higher general distress, and lower life satisfaction. Our findings are consistent with studies that were conducted among adolescents after they had been exposed to a flood (Bokszczanin, 2008) and after they had been exposed to an earthquake (Sun et al., 2012). In relation to the positive association between maternal control and general distress, our findings are in line with non-trauma studies which established the association between over-control and poor mental health (e.g., Diamond et al., 2005; Freudenstein et al., 2011; Pedersen, 1994; Shams & Williams, 1995). Our results also reveal a negative correlation between maternal control and life satisfaction and support a non-trauma study which showed a similar negative association between parental over-control and reports of well-being in a sample of healthy adolescents (Canetti et al., 1997).

The association between maternal over-control and adolescents' poor post-war adjustment should be cautiously interpreted. On the one hand, it is possible to infer that the mothers' tendency to develop too-strict and over-protective relations with their children in the aftermath of war is experienced by adolescents as invasive and harmful, and therefore leads to greater distress among them. This notion is supported by a study which found that traumatic exposure predicted negative parenting practices, which, in turn, predicted increased adolescent psychopathology (Kelley et al., 2010). On the other hand, it is important to remember that parents' behavior is often a reaction to their children's behavior rather than its cause (e.g., Kerr & Stattin, 2003). The mothers' increased control in our study may therefore have been an appropriate response to their adolescent children's post-war elevated distress. Adolescents who were strongly emotionally affected by the war may also have tended to perceive their mothers as more over-protective than they were in actuality. Future causal designs must elaborate on these issues.

Contrary to our hypothesis, maternal control did not moderate the relationship between adolescents' adjustment and war exposure, nor did it moderate the relationship between adolescents' adjustment and earlier trauma. We were unable to replicate findings regarding the negative moderating effect of parental control which had emerged previously from a sample of young

children (McFarlane, 1987) and also from a sample of adolescents (Bokszczanin, 2008). While those two studies focused on the trauma of natural disasters, however, our study focused on the trauma of war, and it may be that the specific type of event—for example, man-made vs. natural—(Herman, 1997), plays an important role in terms of its effects. Moreover, while in our study we measured only maternal control, both McFarlane (1987) and Bokszczanin (2008) measured maternal and paternal control. The presence of an over-protective father may have a different meaning for the adolescent's experience of trauma than the presence of an over-protective mother.

As hypothesized, maternal care was negatively correlated with general distress and positively correlated with life satisfaction. The fact that low levels of maternal care were associated in our sample with enhanced psychological distress supports non-trauma studies which established the association between low parental care and poor mental health (e.g., Diamond et al., 2005; Freudenstein et al., 2011; Pedersen, 1994; Shams & Williams, 1995). Also in accordance with non-trauma studies which demonstrated an association between parental care and adolescents' well-being (Canetti et al., 1997), low levels of parental care were associated in our sample with less life satisfaction.

This finding regarding maternal care is of theoretical significance. It supports family theorists such as Baumrind (1987, 1991) and Hill (1980) who believe that emotional bonding and parental involvement in the child's life remain principal components of healthy development upon adolescence. It seems that parental support remains crucial in the emotional life of the burgeoning adolescent, and its lack can be a strong indicator of emotional difficulties to come (Helsen, Vollebergh, & Meeus, 2000). This notion is supported by the partial confirmation of the moderation hypothesis with regard to maternal care. The interaction between participants' exposure to trauma and their perceived maternal care was found to be significant in the measurement of psychological distress. The pattern of this interaction showed that among individuals who were highly exposed to war, adolescents with less caring mothers exhibited higher levels of distress than equally traumatized adolescents who had more caring mothers.

This finding may be of clinical interest as it echoes previous studies which found mothers to have a protective role in their young children's adjustment. Maternal warmth protected Israeli children from developing behavioral and social difficulties as a result of political violence (I. Lavi & Slone, 2012), and affectionate parenting protected Palestinian children's psychological adjustment by making them less vulnerable to traumatic exposure (Punamaki et al.,

1997). Our results raise the possibility that maternal care also serves as a protective factor for adolescents coping with trauma.

As opposed to our initial expectations, high maternal care was not associated in the current sample with lower levels of PTSD symptoms. This result is also inconsistent with research conducted upon earthquake adolescent survivors (Sun et al., 2012). This inconsistency again raises the question of whether different types of traumatic events (e.g., man-made vs. natural) bring about different types of ramifications. This finding is somewhat bothersome as it implies that maternal warmth and care may not be strong enough resources to overcome adolescents' post-traumatic responses to war. However, it is of great clinical significance, as it supports the idea that PTSD is a psychological condition that requires specific interventions and mental health programs in a post-war setting. Natural variables such as parental warmth and support are insufficient to protect war survivors from developing PTSD in the long term. Further studies examining the association between maternal care and PTSD development are needed.

In accordance with other studies, female adolescents in our sample reported more PTSD symptoms, higher levels of distress, and less life satisfaction than did males (e.g., Canetti et al., 1997; Galea et al., 2002; T. Lavi et al., 2013; Roussos et al., 2005; Yablon, Itzhaky, & Pagorek-Eshel, 2011). Also in keeping with earlier findings (Canetti et al., 1997; Pedersen, 1994), females in our sample perceived their mothers as more caring than the males. This result might be partially explained by the fact that during adolescence, females find parental support to be more important than do males (Helsen et al., 2000) and exhibit greater emotional self-disclosure to parents than do males (Papini, Farmer, Clark, Micka, & Barnett, 1990). Moreover, as it was only maternal (and not paternal) bonding that was measured in our sample, this result may be the outcome of the strong mother-daughter relationship. Mother-adolescent daughter dyads were found to have lower levels of conflict and to engage in more mutually open conversations than mother-adolescent son dyads (Domene, Socholotiuk, & Young, 2011). Our study has failed to shed light on the inconsistent findings regarding the association between gender and parental control (Pedersen, 1994; Shams & Williams, 1995), as no significant correlation between these constructs was found. Future studies should focus attention on this potential association.

The current study suffers from several limitations. First, it is a retrospective cross-sectional study conducted with a specific population at a specific time; therefore, it is impossible to infer directionality of results. Second, the way in which the questionnaires were distributed—that is, in classrooms, where there was little privacy—may have influenced both the willingness of

the participants to answer the questions and also the type of answers they gave. Research assistants were, however, present in the classrooms in order to help alleviate these problems. Third, pupils who were ultimately excluded from the study's sample differed from participants who were included in terms of country of birth and parents' marital status. In comparison with the excluded group, the final sample had higher rates of Israeli-born participants, and more of them had married parents. Therefore, results should be interpreted cautiously and generalized primarily to Israeli-born adolescents and adolescents whose parents are married. As immigration (Mirsky, 2009) and having divorced or single parents (Farbstein et al., 2010) are known to be risk factors for Israeli adolescents' mental health disorders, it may be interesting to search further for a potential unique influence of war on immigrant youth and on children of non-married parents. Fourth, although fathers play an important role in the psychological outcomes of their children and paternal support is known to have a crucial impact on adolescents' well-being (Flannery, Montemayor, & Eberly, 1994; Gecas & Schwalbe, 1986; Gil-Rivas, Holman, & Silver, 2004), only maternal bonding was assessed in our study. As primary caregivers, the role of the mother-child relationship has an immense influence on the child's psychological development (Rothbaum & Weisz, 1994), but adolescents' adjustment in the aftermath of war could potentially be associated with the father-child relationship as well, or with the perceived bonding with both parents as a unit. Future studies should examine these possibilities. It should also be mentioned, however, that positive and satisfying relations with the mother have been shown to reduce the damage caused to children by their fathers' negative behavior (Moore et al., 1990) and that the infant-father attachment is to some degree dependent upon the quality of the infant-mother attachment (Fox, Kimmerly, & Schafer, 1991; Steele, Steele, & Fonagy, 1996).

Despite its limitations, the study has numerous clinical implications for coping with war. It illuminates the importance that should be attributed to the family unit when trying to help adolescents who have survived a war. Treatment programs should consider the inclusion of several family members in addition to the adolescent. Moreover, providing educational programs and psycho-educational information for parents about their parenting style and its implications may contribute to their adolescent children's resilience when coping with trauma.

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