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Assessing Lebanese Children's Reactions to War-Related Stress

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This exploratory study investigates the psychological effect of the 2006 war on Lebanese children. A sample of 110 exposed and 105 nonexposed children (9–12 years) balanced for age and gender were assessed using Spielberger's State-Trait Anxiety Inventory. The analysis aimed at investigating the effect of proximity, exposure to combat, and family loss on children's anxiety levels. Results revealed no gender differences in anxiety level. Combat-exposed children were more anxious than nonexposed children. Children with primary family loss were significantly more anxious and stressed than controls. The association between traumatic war situations in Lebanon and anxiety could have implications for benchmarking, early detection, and preventive efforts.

Recent research has been increasingly focused on understanding the psychological and physiological effects of war and combat on children. Children from different cultural settings such as Bosnia, Cambodia, Lebanon, South America, Palestine, and Israel have consistently reported high levels of posttraumatic stress disorder (PTSD) (Sack, Clarke, & Seeley, 1995) and chronic PTSD symptoms (Kinzie, Sack, Angell, Manson, & Rath, 1986); high comorbidity of depression (Hubbard, Realmuto, Northwood, & Masten, 1995; Weine et al., 1995), anxiety, fear, and anger (Thabet, Abed, & Vostanis, 2002; Scrimin et al., 2009); diminished academic performance and attentive abilities (Saigh, Mroueh, & Bremner, 1997; Yule, 2002; Perin, Smith, & Yule, 2000; Ronen, Rahav, & Rosenbaum, 2003), and sleep disturbances and somatic complaints (Vizek-Vidovic, Kutervac-Jagodic, & Arambasic,

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2000). The presence and severity of these symptoms are directly related to environmental disturbances such as displacement from one's home (Laor et al., 1997), loss of property, proximity to combat, severity and length of combat, irrational perception of threats and death (Qouta, Punamaki, Miller, & El-Sarraj, 2008), absence of parental or alternative social support (Llabre & Hadi, 1997), and violence in families (Garbarino & Kostenly, 1996a).

THE CASE OF LEBANON

The focus of this article is the Israeli war of July 2006. Lebanese children who endured this ordeal have exhibited high levels of aggressiveness, anxiety, bed-wetting, depression, fear, grief, overactivity, overdependence, poor school performance, sleep disturbances, and so forth (Jamal, Shaya, & Armenian, 1986). Several studies of Lebanese children exposed to war conditions have reported higher trait anxiety among orphanage children as compared to children in school (Day, Knight, & El Nakadi, 1986). Also, research has shown that mothers became more aggressive and powerless and described signs of startling, physical aggressiveness, nervousness, nightmares, and bed-wetting on their children (Chikhani-Naccouz, 1985; Yaktine, 1978). In addition, many children resist discussing and/or expressing feelings and war experiences with parents in the fear of upsetting them (Yule, 2002).

In the quest to achieve a more inclusive approach, this study selected children as direct informants. This explorative work is part of a larger project that included parents' and teachers' ratings using the Burks Behavior Rating Scale as related to family loss and combat exposure (El Zein & Ammar, in press).

The purpose of this study was to investigate the psychological effects of proximity to combat and family loss on Lebanese boys and girls ages 9 to 12 using the Spielberger State-Trait Anxiety Inventory. The specific goals of the study were to estimate the level of anxiety among children from Bint Jbeil, Maroun AlRas, and Yarine as related to proximity and duration of combat and to test any correlation between children's anxiety level and the effects of family loss under direct exposure to combat.

METHOD

Participants

A total of 215 children (109 boys and 106 girls) were selected from six villages located south of Lebanon; 110 children were selected from Bint Jbeil, Maroun AlRas, and Yarine and were directly exposed to bombardment over a period of 33 days, and 105 children were selected from the villages of Jezzine, Room, and Azour and were not exposed to bombardment. Of the 215

children, 113 experienced family loss. The two groups (boys and girls) were blocked by gender, proximity to combat, and family intactness.

Procedure

Prior to data collection, researchers followed World Health Organization recommendations for ethical protection of vulnerable research participants from conflict situations. These standards aim to minimize harm and maximize benefits to participants exposed to war trauma. All steps were approved by the Lebanese American University internal review board for ethical concerns and safety of the participants.

Municipalities of the six studied villages were first contacted to locate families. All participants (children and their parents) signed informed consent forms. For confidentiality, all participants were requested to abstain from writing any identifying information on the packet. During administration of the questionnaire, researchers were attentive and assisted children in comprehending the anxiety measure through reading the items; they also helped children when they showed signs of hostility, anger, and intolerance.

Measures

The dependent variable stress was measured in terms of level of anxiety as experienced and reported by the children themselves in the studied villages. To measure anxiety and stress among the children, an Arabic version of the State-Trait Anxiety Inventory (STAI-A; Spielberger et al., 1970) was used. The STAI-A measures transitory-emotional and relatively stable anxiety reactions using two forms: Form 1 (A-State) and Form 2 (A-Trait), consisting of 20 items each.

The Arabic version of the inventory was originally adapted by Day et al. (1986). This version has been tested for reliability and validity, with the results suggesting that the STAI-A is a useful instrument for assessing anxiety among Arabic-reading Lebanese children. The internal consistency coefficient of both the state and trait anxiety scores was .87.

Data Analysis

Means and standard deviations were calculated for the STAI-A. Three-way analyses of variance (ANOVAs) were conducted to assess differences in STAI-A scores.

RESULTS

Anxiety and Gender

In the Trait Scale test, no significant differences were found between the means of girls (39.18) and boys (36.62). For the State Scale, both boys and

girls scored at the same level (boys, $M = 38.57$; girls, $M = 38.14$). No significant differences were found for the two-way (Gender × Family, Combat × Family) or three-way interactions (Gender × Combat × Family) for this effect.

Anxiety and Exposure to Combat

Children exposed to combat scored significantly higher ($M = 39.50$) than children not exposed to combat ($M = 37.21$) on the State Scale. No significant differences were found for the Trait Scale or for the two-way interaction (Gender × Combat).

Anxiety and Primary Family Loss

Children with primary family loss scored significantly higher on the STAI-A (State, $M = 40.64$; Trait, $M = 39.75$) than children with intact families (State, $M = 36.07$; Trait, $M = 37.05$). No significant differences were found for the two-way (Gender × Family, Combat × Family) or three-way interactions (Gender × Combat × Family) for the main effect of primary family loss.

From these results on family loss, it can be said that a child's security largely depends on the contact he or she has with parents. His or her fear, in essence, is always related to factors associated with physical and emotional security. A child dreads separation from his or her parents.

DISCUSSION

Anxiety and Gender

A broad body of literature reports that females exhibit higher levels of distress during stressful situations (Kessler & McLeod, 1984; Witkin-Lanoil, 1989; Farhood et al., 1993; Landau, Beit-Hallachmi, & Levy, 1998; Pfefferbaum, 1997; Bar-Tal, Lurie, & Glick, 1994; Greenbaum, Erlich, & Toubiana, 1993). However, few findings have suggested that boys are more vulnerable (Garbarino & Kostelny, 1996a, 1996b).

In the present study, no significant gender differences were found for the State-Trait Anxiety Inventory scales (Trait: girls, $M = 39.18$, and boys, $M = 36.62$; State: boys, $M = 38.57$, and girls, $M = 38.14$). These findings are inconsistent with previous research in Lebanon, where girls exhibited higher trait anxiety levels (Day, 1986) and boys tended to be more nervous, regressive, and aggressive (Chimienti & Abu Nasr, 1992). A possible explanation could be derived from Helson's adaptation level theory, where adaptation levels are generally related to the frequency of stimulus presentation, its power, its emotional load, and the importance of the stimulus to the individual. In other words, both genders would have used the same readjustment

strategies, leading to comparable anxiety levels. On the other hand, previous research has suggested that gender differences in expressing traumatic events stem from differences in willingness to acknowledge and report distress (Durakovic-Belko et al., 2003). However, the willingness of children to express their feelings was not measured but, rather, was based solely on observation.

The geographical location of the targeted villages under bombardment is another possible reason for the inconsistent findings with previous work. Characteristics such as daily exposure to tension and fear, presence of land mines, and targeted violence against civilians could contribute to the same level of anxiety and stress in both genders (Arroyo & Eth, 1985; Desjarlais, Eisenberg, Good, & Kleinman, 1995; Straker, Moosa, Becker, & Nkwale, 1992). Thus, gender was not a significant moderating factor of exposure to war in the sample.

Anxiety and Proximity to Combat

Children in the three selected villages (exposed to combat) were living in residences that received heavy shelling, resulting in structural damage to buildings in a one square kilometer range and, in turn, raising the anxiety levels of exposed individuals. There was a significant difference in anxiety level on the State Scale between the children exposed to combat ($M = 39.50$) and the control group ($M = 37.21$). These findings confirm previous research on the effects of proximity to combat on anxiety levels (Janis, 1951; Zahr, 1996; Pynoos & Nader, 1988; Terr, 1991; Day, 1986). Janis (1951) explained that severe and prolonged fear reactions are more likely to occur among those who are directly exposed to the physical impact of combat, while the level of fear is diminished among those who are not directly exposed.

The present findings are inconsistent with two major studies: one by Ziv and Israeli (1973) on Israeli school-age children exposed to shelling and the second by Thabet et al. (2002) on Palestinian children ages 9–18 living in a war zone. Proximity to combat did not increase anxiety levels in those studies. In contrast, our findings on Lebanese children revealed that experienced conditions of war were sufficient to affect anxiety symptoms in the studied group exposed to combat. Lebanese children, as opposed to Palestinian or Israeli children, had been living in a noncontinuous threatening situation that may have inhibited the development of the notion of safety. As a result of feelings of land loss, the fear of not being able to return to their houses, witnessing the destruction of their houses, being deprived of playing in the fields because of land mines, and the sporadic, unexpected hovering of Israeli planes, the children reacted to trauma in accordance with what it meant to them, thus leading to a high level of anxiety.

Anxiety and Family Loss

Our findings indicated significant differences between children who had experienced family loss (State $M = 40.64$, Trait $M = 39.75$) and those with intact families (State $M = 36.05$, Trait $M = 37.05$). At the qualitative level, the symptoms indicative of this distress are the covert type described in Spielberger's scale related to nervousness, anxiety, ability to cope, general fear, emotional upset, and other similar patterns of feeling.

The substantial differences in anxiety levels between children who lost a family member and children who did not could be explained by examining the importance of family ties in the Lebanese culture. Most Lebanese families are renowned for strong mutual family unity. The loss of any family member can burden and disrupt the family, causing deep traumatic wounds. In this study, the highest rate of death for the studied groups was reported among male figures (39 war-related deaths, 17 not found, 7 heart attacks, 4 critically injured). The high levels of anxiety reported in these children are consistent with data from Rwanda (Dyregrov et al., 2000), Bosnia (Smith et al., 2002), and Sudan (Morgos, Worden, & Gupta, 2008), where children exhibited both traumatic and existential grief symptoms caused by separation and death, disruption of normal rituals of grieving, the sudden and traumatic nature of the deaths, and multiple losses within the same family. Our findings reveal a significant interaction effect of gender and family loss, where girls are considerably more affected by the incidence of tragic events of loss. This could be explained along the same line of sex typing and cultural traditions, where girls are brought up to feel closer to the family and to be more economically dependent on parents as compared to boys. These findings harmonize with other studies assessing PTSD in children (e.g., Dyregrov et al., 2000; Goldstein, Wampler, & Wise, 1997; Thabet et al., 2004).

The significant and high level of anxiety reported by the children may be elucidated by the disruption of traditional tasks of the deceased. During the war, dead people were buried in groups, contrary to usual practices performed in the Lebanese culture. Normally, Lebanese society draws upon the cohesiveness of extended family members to ameliorate and commiserate with loss. When rituals are disrupted and death witnessed, it is normal that children would more likely experience anxiety and grief symptoms (Smith et al., 2002).

Children in this study exhibited the expected high levels of anxiety common during separation and deaths. This may be explained by the fact that children of the age of our participants are more able to express their grief (Wooding & Raphael, 2004) and can understand the importance of loss and the concept of death as a form of finality and irreversibility (Raphael, 1977).

In conclusion, it is hard to assess the end of a war. Does it ever end? Any war has long-term, sometimes irreversible detrimental consequences,

especially on vulnerable children. In this study, children exhibited high anxiety levels on both state and trait scales, with children enduring the loss of a family member scoring the highest on both scales. These findings are novel in the context of Lebanon. To our knowledge, few studies have investigated the mental well-being of Lebanese children during and after the 2006 war.

The generalizability of this study is limited because the data were collected via (children's) self-report. This study only focused on the measurement of anxiety levels among children exposed to combat who had suffered family losses. The analyzed variables were relatively limited; adding a longitudinal component could help in optimizing the understanding of anxiety.

A number of implications emerge from these findings. There is an urgent need to implement guiding and counseling measures to control, treat, and prevent psychological disturbances. Support, reassurance, and guidance are recommended in efforts to treat social disturbances among children. In addition, a follow-up longitudinal study using the same sample would provide insight into the long-term effects of war and trauma on this population of children.

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