Exposure to Violence and its Relationship to Mental Health in Palestinian Youth

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Abstract

Using a representative, household survey of 2481 Palestinian youth, we examined elevated psychiatric symptomatology (global distress, depression, anxiety) and its relationship to various forms of violence exposure (personal victimization, witnessed, vicariously heard about). About half the sample had elevated symptoms of global distress (46%) and depression (55%), and one-third (37%) had elevated symptoms of anxiety. Median number of lifetime violence events experienced was 3, and 1 in the past year; 47% had ever been a personal victim of a violence event, 71% had witnessed a violence event, and 69% had heard about a violence event that someone close to them had experienced. In logistic regression analyses that controlled for other bivariate correlates of the mental health dependent variables, exposure to any violence event, as well as any of the 3 types of violence exposure, were independently associated with each of the 3 measures of elevated psychiatric symptomatology. Females were four times as likely to report elevated symptoms of psychopathology, despite being less likely to experience each of the three types of violence exposure compared to males. These findings suggest the need for services that specifically cater to the mental health needs of female youth in settings of high violence exposure.

Exposure to violence is a significant risk factor for the development of psychopathology in children and youth, as violence exposure has been found to be related to aggression, academic difficulties, and symptoms of post-traumatic stress, anxiety and depression (Trickett et al., 2003; Lynch, 2003). Protracted exposure to violence may lead children to feel as though their safety and that of their family and friends is constantly jeopardized (Dubow et al., 2010).

The mental health consequences of violence exposure among youth have been studied mostly in the context of violence in schools (Flannery et al., 2004), at home (Boxer et al., 2009), and in communities (Trickett et al., 2003). Less research has examined these relationships in the context of ethnic or political conflict. The Palestinian-Israeli conflict has for years exposed Palestinian youth and others to violence, ranging from physical assault and air raids, to police arrest or imprisonment, and home demolition or displacement (Sloane et al., 1999). Violence exposure can be in the form of personal victimization, or alternatively as a witness to violence, or vicariously hearing about such violence from others. Yet unlike studies of nonpolitical violence (Trickett et al., 2003), most research on political conflict has aggregated violence exposure, rather than examined the distinction between the effects of these different forms of exposure on mental health (Barber, 2013). Some research suggests that direct victimization has more detrimental effects on mental health than witnessing violence (Fowler et al., 2009), but there are nonetheless substantial negative effects of witnessing violence (Singer et al., 1999), which is far more prevalent than direct victimization (Mrug et al., 2008).

Research on the mental health consequences of violence exposure in youth has focused mostly on symptoms of post-traumatic stress disorder, including in the Middle East (Dubow et al., 2012; Thabet et al., 2008), but the association of violence exposure to depression and anxiety have also been established in this region (Thabet et al., 2004; Macksoud & Aber, 1996). In

Palestine, children with greater exposure to conflict-related violence had greater posttraumatic distress and somatic complaints, and girls had more somatic complaints than boys (Abdeen at al., 2008; Pat-Horenczyk et al., 2009); among kindergarten students in Gaza, resilience was negatively associated with exposure to traumatic events (Massad et al., 2009). Most studies in the region were conducted with school-based samples, which are limited by their focus on school age children and exclusion of those no longer in school (and thus perhaps more vulnerable).

While the above cited studies have shown a relationship between violence exposure and psychiatric symptomatology in youth, other studies have found no or only modest correlations between these constructs (see Barber & Schluterman, 2009 for a review), which suggests the potential for resiliency among youth exposed to ongoing violence. The risk and protective factor model of developmental psychopathology (Rutter, 1990) has been used to identify ecological and individual factors that either place children at risk for psychopathology or promote resilience in the face of challenging circumstances. Protective factors help youth cope with the stress of ongoing violence by supporting self-worth, security of social relations, and sense of control (Weems & Overstreet, 2009). Key variables associated with psychological resiliency in the face of conflict violence among youth include higher self-esteem, positive parenting, school adjustment, and effective coping and problem solving skills (Dubow et al., 2012; Barber, 2013). Gender differences have also been observed, with females often being exposed to less violence overall compared to males (Zona & Milan, 2011), but reporting more symptoms of psychological distress, in particular internalized symptoms (e.g., depression) (Foster, 2004).

With data from a large representative, household survey of Palestinian youth in the West Bank and East Jerusalem, we examined the prevalence of elevated psychiatric symptomatology, its relationship to various forms of violence exposure (personal victimization, witnessed,

vicariously heard about), and identification of variables that may serve either to facilitate psychological resiliency or to exacerbate the risk of mental health problems.

Method

Study Design

This cross-sectional study used a household survey methodology to obtain a representative sample of youth age 15-24 living in the West Bank and East Jerusalem. A stratified two-stage random sample was drawn based on the 2007 Population Census, with the strata formed by crossing the 12 governorates with urban, rural, and refugee camp location. Within each of these strata, survey clusters (census enumeration areas) were randomly sampled with probability proportional to size for a total of 208 clusters. Within each cluster, a modified random walk procedure was followed to locate 14 households with youth in the appropriate age range. Implicit stratification was used to ensure equal numbers of males and females (during the random walk, the teams first looked for a household with a male youth, then one with a female youth, and so on). Where households had more than one individual age 15-24 of the targeted gender, Kish tables were used to randomly select the youth for interview.

Participants

For minors (under 18), parental consent was obtained to conduct the interview. Separate consent was obtained from all youth. Interviewers were strictly instructed to ensure that the youth interview was carried out in a private room or other private area (in some cases this was on the flat roof of the home). Youth were given the option of meeting separately at a local youth center or other location for the interview, but few did so. Female youth were interviewed by females and male youth by males. The study was approved by (BLINDED) Human Subjects Protection Committee. Refusal rates by youth were low (11% for the survey overall).

The sample of 2,481 youth was evenly split between males and females. Table 1 lists the characteristics of the sample as a whole and by gender. Compared to females, males had a lower perceived chance of having a good job by the age of 30; males were also more likely to be very religious, to be currently working, to have a living mother, to ever have used alcohol and to currently smoke tobacco, and to have engaged in political activism, but less likely to be attending school and be married (see Table 1). About one quarter of the sample was made up of refugees.

Measures

Demographic and background characteristics included gender, age, residential location (urban, rural), work status, refugee status, school attendance, relationship status, and whether or not the mother and father of the youth were living. Respondents were asked to indicate whether they considered themselves 'not religious', 'somewhat religious', or 'very religious'. To assess family socioeconomic status, participants were asked about household ownership of various consumer durables such as a car, television and microwave, the data from which were used in a factor analysis to create a household wealth index (Sahn & Stifel, 2003). By construction, the mean of the index for the overall sample is zero with a standard deviation of 1.0.

Mental health was assessed with the 25-item Hopkins Symptoms Checklist (Derogatis, 1974), which is comprised of two subscales: 10 items measuring anxiety and 15 items measuring depression, and the total scale measures global distress. Response options for each item range from 0 'not at all' to 3 'extremely'; responses within each of the two subscales, as well as the total scale, are summed and divided by the number of answered items to generate scores for depression, anxiety and global distress. Scores greater than 1.75 on each subscale (or total score) represent elevated symptomatology (Halepota et al., 2001).

Exposure to violence was measured with a list of 11 events, which were categorized into three type of violence exposure: personally experienced violence (5 events; e.g., beaten up or physically assaulted by soldiers or police; shot by rubber/plastic or real bullets; imprisoned or held by police or other authority); witnessed violence (4 events; e.g., witnessed shooting of close relative or friend; witnessed close relative/friend's/neighbor's house closure or demolition); and vicarious or heard about violence (2 events; e.g., had a close relative or friend who was killed). Each item elicited a yes (1)/no (0) response as to whether the event was experienced, and for the events that had been experienced, the age at which the event was last experienced was recorded. For each of the three violence types, as well as the scale as a whole, a dichotomous variable was created to represent whether any events of that type had been experienced.

Psychosocial characteristics. *Social support* was measured with a single item, "If you need help or have a problem or question about anything, is there a specific person that you can go to for help or support or an answer to the question"? Response options were Yes, No, and Don't know. To assess *future outlook*, respondents were asked to estimate "the percent chance (0 to 100%) that you will have a good job by the time you are 30 years of age?" *Fatalism* was measured with a 6-item scale adapted from a scale developed by Esparza (2008). Respondents were asked to indicate their level of agreement with statements (e.g., What happens to me in the future mostly depends on me) on a scale of 1 'strongly disagree' to 4 'strongly agree'; items framed against fatalism were reverse scored, and then mean item score was calculated such that higher scores represent greater fatalism. To assess substance use, respondents were asked if they *currently use tobacco* (e.g., cigarettes, shisa) or use alcohol, and if they have *ever taken an alcoholic drink* (all using a yes/no response format). *Political activism* was assessed by asking participants if they had ever attended a political demonstration, and if so, how many times they had in their lifetime;

for analysis, a binary variable was created to represent whether or not the participant was politically active, which was defined as having attended at least 2 demonstrations.

Data analysis

Bivariate statistics (2-tailed, independent t-tests and Chi Square tests) were used to examine correlates of the three measures of elevated psychiatric symptomatology (global distress, depression, anxiety). Logistic regression analyses examined multivariate correlates of these three mental health measures, controlling for bivariate correlates at the significance level of $p < .05$. The analysis was done using STATA version 13, applying the 'Survey' routine, which incorporates the survey design, and the correlations of standard errors within sample clusters.

Results

Prevalence of Elevated Psychiatric Symptomatology

Table 1 lists the sample mean scores for global distress, depression and anxiety, as well as proportion of the sample with elevated symptoms of global distress, depression and anxiety. About half the sample had elevated symptoms of global distress (45.7%) and depression (55.2%), and over one-third (37.0%) had elevated symptoms of anxiety, but all rates were significantly higher among females than males. Depression and anxiety were strongly related, with a correlation of the mean scores of 0.73 ($p < .001$).

Prevalence of Violence Exposure

A high level of violence exposure was observed in the sample: 85.0% of youth experienced at least one event in their lifetime, with a mean of 2.9 ($SD = 2.1$; $mdn = 3$) events experienced; the mean number of events experienced in the past year was 0.95 ($SD = 1.29$; $mdn = 1$); 46.7% had been a personal victim of any violence event, 70.8% had witnessed any violence event perpetrated on a relative or close friend, and 68.9% had heard about any violence event

that a relative or close friend had experienced. The most common personally experienced violence event was being beaten up or assaulted by someone other than a policeman or soldier (36%), the same but by a policeman or soldier (12%), and being imprisoned or held by police (12%); the most common witnessed violence events were witnessing a relative/friend being beaten (58%) and witnessing a relative/friend being shot (35%); regarding the vicarious violence events, 60% had heard of a relative/friend being imprisoned and 35% had heard of a relative/friend being killed. Table 1 lists the sum of all experienced events, and the proportion that had experienced any of the events within each subtype; these statistics are presented for the whole sample as well as among males and females separately. Male youth reported exposure to more violence events overall, as well as a greater proportion having experienced each of the 3 types of violence events, compared to females (see Table 1).

Relationships Between Mental Health and Violence Exposure

Table 2 lists the bivariate correlates of elevated symptoms of distress, depression and anxiety. Elevated symptoms of global distress, depression, and anxiety were each significantly associated with the sum of violence exposure events, as well as whether any of the types of violence exposure events was experienced. Other significant bivariate correlates of having elevated global distress included female gender and older age, not currently working and not currently attending school (both of which could protect against distress), and several factors that were considered to be possible risk factors for greater distress including higher fatalism, lower expected chance of having a good job by age 30, history of alcohol use, being politically active, and having lost one's mother or father. Social support was not related to elevated global distress, but being married or engaged was positively correlated with elevated global distress. Correlates of elevated depression and anxiety symptoms were the same as that of global distress except

being very religious was negatively correlated with both depression and anxiety, but not global distress, and work status was unrelated to elevated depressive symptoms.

We examined the relationship between exposure to violence and elevated global distress in multivariate logistic regression analysis, starting with the full sample (see Table 3). First, using any violence exposure event experienced (across all types of violence exposure) as the sole violence measure in the model as an independent variable, along with other significant bivariate correlates of elevated global distress, violence exposure was independently associated with elevated global distress. When this combined violence exposure measure was replaced in the model by three variables representing any experience of the three types of violence events (personally experienced, witnessed, vicarious), each of these three violence exposure variables was independently correlated with elevated global distress. When looking at predictors of elevated depression and anxiety, similar findings emerged; the only exception is that any experience of vicarious violence exposure events was unrelated to elevated anxiety (see Table 3).

Among the other independent variables in the models, being female was associated with elevated symptomatology in each of the models, and being married or engaged was associated with lower odds of elevated global distress and depression (a reversal of the direction of the relationships observed in the bivariate analysis). Factors that can increase the risk for mental health problems were significantly associated with elevated symptomatology, including the death of one's father and any history of alcohol use, which were correlates in all models, greater fatalism, which was associated with elevated depression, and lower expectations of having a good job by the age of 30, which was associated with elevated global distress symptoms.

Similar results were observed in the separate regression analyses for male (see Table 4) and female youth participants (see Table 5), with the following few exceptions: among males,

exposure to any witnessed violence events and death of their father were not independently associated with any of the three elevated psychiatric symptomatology measures; among females, being married or engaged, fatalism, older age, and expectations of having a good job by age 30 were all unrelated to any of the elevated psychiatric symptomatology measures.

Discussion

In this unusual population-based sample of Palestinian youth, high levels of mental health problems were reported, with about half of the sample reporting elevated symptoms of global distress and depression, and one-third reporting elevated anxiety symptoms. High levels of violence exposure were also observed, and violence exposure was strongly associated with elevated symptoms of psychopathology. Our data also showed evidence of gender differences in both mental health and violence exposure, as well as factors that may serve to protect against mental health problems and others that may act as risk factors.

Nearly half the sample had ever personally been the victim of violence, and over two-thirds had ever witnessed or heard about violence being perpetrated on a close relative or friend. Violence exposure was associated with each of the three forms of elevated psychopathology (global distress, depression, anxiety), and these mental health measures were associated with each of the three types of violence exposure (personally experienced, witnessed, and vicariously heard about violence). These findings suggest that violence does not have to be personally experienced to influence mental health; indirect forms of violence exposure (e.g., witnessed and vicarious violence exposure) are also independently associated with mental health symptoms. This finding is consistent with other studies of youth exposure to community violence that were not conducted in political conflict settings, but which also found personally experienced,

witnessed and heard about violence exposure to have equal impact on mental health problems including depression and anxiety (Fowler et al., 2009).

Consistent with other studies (Zona & Milan, 2011; Foster, 2004), gender differences were observed with regards to both mental health and violence exposure. Female youth reported significantly higher levels of mental health problems, while males reported higher exposure to violence events and were more likely to have experienced each of the three types of violence exposure events. The greater experience of violence among males may reflect gender differences and selection biases regarding the contexts or settings in which individuals may chose to enter, particularly in war-torn areas; males may actively seek or be more comfortable in settings of higher violence exposure. Being female was an independent correlate of higher odds of elevated symptoms of global distress, depression and anxiety, indicating that factors independent of violence exposure contribute to female youth experiencing higher levels of depression, anxiety and distress. Others have theorized that girls are more likely to internalize the stress associated with violence exposure, resulting in greater symptoms of depression and anxiety, whereas boys may be more likely to externalized stress as manifested by behavioral acting out or poor school performance (Scarpa, 2003; Zona & Milan, 2011). If we had measured more externalized expressions of distress such as antisocial and aggressive actions towards others, then we may have found that males were more likely to present with such mental health problems.

All three types of violence exposure were associated with elevated psychiatric symptomatology among females and the magnitude of the relationship to symptomatology (strength of the odds ratio) was similar across each type of violence exposure. In contrast, among males, having personally experienced violence was the type of exposure most strongly associated with elevated symptomatology. Odds ratios for global distress, depression and anxiety were at

least descriptively higher for personal experience than for vicarious exposure; witnessed violence exposure was not associated with any of the three mental health measures. With male youth being exposed to more violence, they may have a higher threshold for such violence contributing to emotional distress, or there violence may become normalized in their day-to-day lives, resulting in personal victimization being what is needed to cross this threshold.

Our analysis sought to identify factors, in addition to violence exposure, that either protect against mental health problems, or are risk factors for such problems. The regression models revealed that the one protective factor that promoted mental health resilience was being married or engaged; this was associated with not having elevated symptoms of distress or depression among the male participants. The social support that comes from a partner within a committed relationship may be instrumental to psychological well-being and positive coping with a stressful environment. The protective function of a spouse or partner with regard to mental health was not evident among the female participants, which is consistent with other research that has shown that being married is protective against depression more so for men than women (Scott et al., 2010), and may reflect gender differences in the experience of multiple role demands within marriages and the power differential between men and women in relationships in Arab cultures. For female youth, a different source of support, having a father who was still alive, served to protect against distress as it was independently associated with lower odds of elevated psychiatric symptomatology, suggesting that family and parents specifically can provide vital sources of support for managing stress (Dubow et al., 2012; Barber, 2013).

As seen here and discussed previously (Glick et al., 2016), whereas the majority of the sample reported tobacco use, any history of alcohol use was reported by just 11% of the sample—a rate that is similar to what was found in other samples of youth in the Middle East

(Mohammadi et al., 2006). Alcohol use was associated with elevated symptoms of distress, depression and anxiety, which is consistent with evidence demonstrating the comorbidity of substance use and mental health problems (Chan et al., 2008), including among youth in the Middle East (Ismayilova et al., 2013). Substance use can be a signal of struggles in coping with stress, and this may be particularly true with substances that are less culturally acceptable, which is the case for alcohol (as opposed to tobacco) in the Palestinian context.

Fatalistic attitudes and beliefs about life, and pessimism regarding one's future (as reflected in lower expectancy for having a good job by age 30) were both associated with elevated symptoms of depression and distress, particularly among the male participants. These findings highlight how mental health among youth is influenced by expectations, outlook and locus of control regarding the events and circumstances of their future, and this may be particularly true in contexts that are characterized by ongoing exposure to violence. Youth programs and services need to help their clients see merits of their future, and opportunities for success—though this is undoubtedly very challenging given the significant stressors and environmental challenges that Palestinian youth (and others) face. However, it should be cautioned that the observed relationships driving these conclusions may not be causal since expectations and outlook may well be conditioned by depression or distress.

Engagement in political activism was independently associated with higher odds of elevated psychiatric symptomatology. A possible explanation for this relationship is that participation in demonstrations or protests can result in greater exposure to distressing experiences that may occur during the demonstration. Alternatively, participation in demonstrations may be associated with stronger beliefs or attitudes towards political conflict, which may render someone more vulnerable to emotional distress, particularly if the goals of the

demonstration are not achieved. As this was a cross-sectional study, it is also possible that greater distress may propel someone to engage in activism, so the relationship between these constructs could be bi-directional.

As mentioned above, a key limitation of the study is its cross-sectional design, which limits our ability to make causal inferences. Other limitations include the reliance on symptom self-reports, rather than more rigorous clinical interviews to examine mental health status and the presence of psychiatric disorders. Social desirability bias may have influenced participant responses, particularly with regard to mental health problems and substance use which may be more culturally sensitive, and local gender norms could result in their being a gender differential with regard to candidness; for example, males may have been more comfortable disclosing substance use behavior, and females being more comfortable disclosing symptoms of distress. Our analysis of factors contributing to mental health resilience was hampered by the absence of measures of factors that have been found to be associated with resilience among youth exposed to violence, such as parenting practices, school performance, and coping styles. However, the use of a rare large, representative sample does offer important insights into the prevalence of, and factors influencing, the mental health of youth with a high exposure to conflict and violence.

In summary, elevated symptoms of depression and anxiety were common in this representative sample of Palestinian youth, as was exposure to violence (both direct and indirect), and violence exposure was independently associated with such symptomatology. Female youth were less exposed to violence, and our data provided evidence that females are more likely than their male counterparts to report elevated symptoms of distress, depression and anxiety, whereas males may be more apt to normalize violence and need to be the personal victim of violence before mental health is negatively impacted; however, our study did not

measure aspects of mental health and distress that may be more common among males (e.g., antisocial, aggressive behaviors), so we cannot necessarily conclude that the mental health needs of female youth are greater than that of males in settings of high violence exposure. Youth services in the Palestinian and other Middle East contexts can also be informed by our findings that identify the influence on mental health of factors such as parental death, alcohol use and outlook and expectations for one's future as these can serve to characterize youth who may be at greater risk for mental health problems and have greater need for support services.

References

Abdeen, Z., Qasrawi, R., Nabil, S., & Shaheen, M. (2008). Psychological reactions to Israeli occupation: Findings from the national study of school-based screening in Palestine. *International Journal of Behavioral Development, 32*, 290-297. doi: 10.1177/0165025408092220

Barber, B. K. (2013). Annual Research Review: The experience of youth with political conflict--challenging notions of resilience and encouraging research refinement. *J Child Psychol Psychiatry, 54*, 461-473. doi: 10.1111/jcpp.12056

Barber, B. K., & Schulteman, J. M. (2009). An overview of the empirical literature on adolescents and political violence. In B. K. Barber (Ed.), *Adolescents and war: How youth deal with political violence* (pp. 35-61). New York: Oxford University Press.

Boxer, P., Gullan, R. L., & Mahoney, A. (2009). Adolescents' physical aggression toward parents in a clinic-referred sample. *J Clin Child Adolesc Psychol, 38*, 106-116. doi: 10.1080/15374410802575396

Chan, Y. F., Dennis, M. L., & Funk, R. R. (2008). Prevalence and comorbidity of major internalizing and externalizing problems among adolescents and adults presenting to substance abuse treatment. *Journal of Substance Abuse Treatment, 34*, 14-24. doi: 10.1016/j.jsat.2006.12.031

Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL). A measure of primary symptom dimensions. *Mod Probl Pharmacopsychiatry, 7*, 79-110.

Dubow, E. F., Boxer, P., Huesmann, L. R., Shikaki, K., Landau, S., Gvirsman, S. D., & Ginges, J. (2010). Exposure to conflict and violence across contexts: relations to adjustment

among Palestinian children. *J Clin Child Adolesc Psychol, 39*, 103-116. doi: 10.1080/15374410903401153

Dubow, E. F., Huesmann, L. R., Boxer, P., Landau, S., Dvir, S., Shikaki, K., & Ginges, J. (2012). Exposure to political conflict and violence and posttraumatic stress in Middle East youth: protective factors. *J Clin Child Adolesc Psychol, 41*, 402-416. doi: 10.1080/15374416.2012.684274

Esparza, O. A., Wiebe, J. S., & Quinones, J. (2015). Simultaneous Development of a Multidimensional Fatalism Measure in English and Spanish. *Current Psychology, 34*, 597-612. doi: 10.1007/s12144-014-9272-z

Flannery, D. J., Wester, K. L., & Singer, M. I. (2004). Impact of exposure to violence in school on child and adolescent mental health and behavior. *Journal of Community Psychology, 32*, 559-573. doi: 10.1002/jcop.20019

Foster, J. D., Kuperminc, G. P., & Price, A. W. (2004). Gender differences in posttraumatic stress and related symptoms among inner-city minority youth exposed to community violence. *Journal of Youth and Adolescence, 33*, 59-69. doi: Doi 10.1023/A:1027386430859

Fowler, P. J., Tompsett, C. J., Braciszewski, J. M., Jacques-Tiura, A. J., & Baltes, B. B. (2009). Community violence: A meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Development and Psychopathology, 21*, 227-259. doi: 10.1017/S0954579409000145

Glick, P., Kammash, U., Shaheen, M., Brown, R. A., Goutam, P., Karam, R. (2016). Prevalence and Patterns of Health Risk Behaviors of Palestinian Youth: Findings from a Representative Survey. Santa Monica, CA: RAND Corporation.

Halepota, A. A., & Wasif, S. A. (2001). Hopkins Symptoms Checklist 25(HSCL-25) Urdu translation: an instrument for detecting anxiety and depression in torture and trauma victims. *J Pak Med Assoc, 51*, 255-257.

Ismayilova, L., Hmoud, O., Alkhasawneh, E., Shaw, S., & El-Bassel, N. (2013). Depressive Symptoms Among Jordanian Youth: Results of a National Survey. *Community Mental Health Journal, 49*, 133-140. doi: 10.1007/s10597-012-9529-7

Lynch, M. (2003). Consequences of children's exposure to community violence. *Clin Child Fam Psychol Rev, 6*, 265-274.

Macksoud, M. S., & Aber, J. L. (1996). The war experiences and psychosocial development of children in Lebanon. *Child Development, 67*, 70-88. doi: DOI 10.1111/j.1467-8624.1996.tb01720.x

Massad, S., Nieto, F. J., Palta, M., Smith, M., Clark, R., & Thabet, A. A. (2009). Mental Health of Children in Palestinian Kindergartens: Resilience and Vulnerability. *Child and Adolescent Mental Health, 14*, 89-96. doi: 10.1111/j.1475-3588.2009.00528.x

Mohammadi, M., Mohammad, K., Farahani, F., Alikhani, S., Zare, M., Tehrani, F. (2006). Reproductive knowledge, attitudes and behavior among adolescent males in Tehran, Iran. *International Family Planning Perspectives*, *32*, 35-44.

Mrug, S., Loosier, P. S., & Windle, M. (2008). Violence exposure across multiple contexts: Individual and joint effects on adjustment. *American Journal of Orthopsychiatry, 78*, 70-84. doi: 10.1037/0002-9432.78.1.70

Pat-Horenczyk, R., Qasrawi, R., Lesack, R., Haj-Yahia, M., Peled, O., Shaheen, M., . . . Abdeen, Z. (2009). Posttraumatic Symptoms, Functional Impairment, and Coping among Adolescents on Both Sides of the Israeli-Palestinian Conflict: A Cross-Cultural

Approach. *Applied Psychology-an International Review-Psychologie Appliquee-Revue Internationale, 58*, 688-708. doi: 10.1111/j.1464-0597.2008.00372.x

Rutter, M. (1990). Psychosocial Resilience and Protective Mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlien & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181-214). New York: Cambridge University Press.

Sahn, D. E., & Stifel, D. (2003). Exploring alternative measures of welfare in the absence of expenditure data. *Review of Income and Wealth, 4,* 463-489.

Scarpa, A. (2003). Community violence exposure in young adults. *Trauma, Violence & Abuse, 4*, 210-227.

Scott, K.M., Wells, J.E., Angermeyer, M., Brugha, T.S., Bromet, E., Demyttenaere, K., …, Kessler, R.C. (2010). Gender and the relationship between marital status and first onset of mood, anxiety and substance use disorders. Psychology Health, 40, 1495-1505. doi: 10.1017/S0033291709991942.

Singer, M. I., Miller, D. B., Guo, S. Y., Flannery, D. J., Frierson, T., & Slovak, K. (1999). Contributors to violent behavior among elementary and middle school children. *Pediatrics, 104*, 878-884. doi: DOI 10.1542/peds.104.4.878

Slone, M., Lobel, T., & Gilat, I. (1999). Dimensions of the political environment affecting children's mental health - An Israeli study. *Journal of Conflict Resolution, 43*, 78-91. doi: Doi 10.1177/0022002799043001005

Thabet, A. A., Abu Tawahina, A., El Sarraj, E., & Vostanis, P. (2008). Exposure to war trauma and PTSD among parents and children in the Gaza strip. *Eur Child Adolesc Psychiatry, 17*, 191-199. doi: 10.1007/s00787-007-0653-9

Thabet, A. A. M., Abed, Y., & Vostanis, P. (2004). Comorbidity of PTSD and depression among refugee children during war conflict. *Journal of Child Psychology and Psychiatry, 45*, 533-542. doi: DOI 10.1111/j.1469-7610.2004.00243.x

Trickett, P. K., Duran, L., & Horn, J. L. (2003). Community violence as it affects child development: Issues of definition. *Clin Child Fam Psychol Rev, 6*, 223-236. doi: Doi 10.1023/B:Ccfp.0000006290.91429.75

Weems, C. F., & Overstreet, S. (2009). An ecological needs based perspective of adolescent youth emotional development in the context of disaster: Lessons from hurricane Katrina. In K. E. Cherry (Ed.), *Lifespan perspectives on natural disasters*. New York: Springer.

Zona, K., & Milan, S. (2011). Gender Differences in the Longitudinal Impact of Exposure to Violence on Mental Health in Urban Youth. *Journal of Youth and Adolescence, 40*, 1674-1690. doi: 10.1007/s10964-011-9649-3

Table 1

Sample Description by Gender and the Whole Sample

Variable	Total Sample (N=2481)	Males (N=1241)	Females (N=1241)	P value
Demographic and Background Characteristics				
Mean age	19.1	18.9	19.2	.002
Refugee	26.0%	25.4%	26.5%	.518
Live in rural location	26.9%	26.9%	26.9%	.989
Currently attending school	63.0%	60.2%	64.8%	.020
Currently working	18.5%	31.0%	6.0%	.000
Wealth (asset) index	0.000	0.126	-0.127	.000
Married or engaged	17.0%	4.2%	29.8%	.000
Very religious	20.0%	21.4%	18.0%	.034
Father is alive	93.7%	94.0%	93.4%	.505
Mother is alive	98.5%	99.1%	97.8%	.009
Has someone to turn to for support	83.0%	82.4%	83.8%	.228
% chance of having a good job by age 30	48.3%	54.7%	41.9%	.000
Currently using tobacco	40.9%%	55.8%	26.0%	.000
Has ever used alcohol	11%	13.8%	7.3%	.000
Has attended more than 1 political demonstration or protest	25%	29.7%	20.7%	.000
Mental Health				
Global distress mean	1.79	1.65	1.93	.000

Elevated global distress (%)	45.7%	33.2%	58.2%	.000
Depression mean	1.88	1.73	2.02	.000
Elevated depression (%)	55.2%	43.1%	67.3%	.000
Anxiety mean	1.67	1.54	1.80	.000
Elevated anxiety (%)	37.0%	26.5%	47.7%	.000
Violence exposure				
Sum of events experienced in lifetime	2.90	3.42	2.33	.000
Had any personal victimization events	46.7%	61.6%	31.9%	.000
Had any witnessed violence events	70.8%	78.9%	62.8%	.000
Had any vicarious violence events	68.9%	71.4%	66.5%	.007

Table 2

Bivariate Correlates of Elevated Symptoms of Global Distress, Depression and Anxiety

Independent Variable	Elevated Global Distress Symptoms		Elevated Depression Symptoms		Elevated Anxiety Symptoms	
	No	Yes	No	Yes	No	Yes
Female gender	38.4%[c]	63.6%[c]	36.5%[c]	60.9%[c]	41.5%[c]	64.3%[c]
Age	18.7[c]	19.4[c]	18.7[c]	19.4[c]	18.9[c]	19.3[c]
Refugee	25.3%	26.7%	24.1%	27.4%	25.8%	26.1%
Live in rural location	70.1%	71.7%	69.1%	72.2%	70.1%	72.1%
Currently attending school	65.0%[b]	59.5%[b]	65.7%[b]	59.9%[b]	64.3%[a]	59.5%[a]
Currently working	19.9%[a]	16.9%[a]	20.1%	17.3%	20.2%[b]	15.7%[b]
Wealth (asset) index	0.005	-0.005	0.011	-0.009	0.011	-0.018
Married or engaged	13.8%[c]	20.8%[c]	14.2%[b]	19.3%[b]	14.5%[c]	21.4%[c]
Very religious	20.8%	18.4%	21.4%[a]	18.3%[a]	21.0%[a]	17.4%[a]
Father is alive	95.6%[c]	91.5%[c]	95.6%[b]	92.2%[b]	95.2%[c]	91.3%[c]
Mother is alive	99.3%[c]	97.5%[c]	99.2%[b]	97.9%[b]	99.2%[c]	97.3%[c]
Has someone to turn to for support	83.4%	82.8%	82.8%	83.4%	16.9%	16.7%
Fatalism	2.00[c]	2.08[c]	1.98[c]	2.08[c]	2.01[b]	2.08[b]
% chance of having a good job by age 30	51.1%[c]	44.9%[c]	50.9%[c]	46.2%[c]	50.4%[c]	44.7%[c]

Currently using tobacco	73.4%	75.0%	74.2%	74.1%	73.0%	76.1%
Has ever used alcohol	7.7%[c]	14.0%[c]	7.3%[c]	13.2%[c]	8.4%[c]	14.2%[c]
Politically active	21.9%[c]	29.2%[c]	21.0%[c]	28.6%[c]	22.6%[c]	29.6%[c]
Sum of violence event exposure	2.56[c]	3.24[c]	2.45[c]	3.22[c]	2.64[c]	3.27[c]
Any violence exposure	81.1%[c]	89.6%[c]	80.2%[c]	88.9%[c]	82.3%[c]	89.5%[c]
Any personally experienced violence	42.4%[c]	51.9%[c]	40.9%[c]	51.5%[c]	42.8%[c]	53.3%[c]
Any witnessed violence	66.9%[c]	75.4%[c]	65.3%[c]	75.2%[c]	68.1%[c]	75.4%[c]
Any vicarious violence	63.5%[c]	75.4%[c]	61.6%[c]	74.9%[c]	65.7%[c]	74.5%[c]

Note: Test for association of covariate and elevated symptomology of global distress, depression and anxiety was performed using Chi Square test or 2-tailed independent t-test

[a] $p < .05$, [b] $p < .01$, [c] $p < .001$

Table 3

Multiple Regression Analyses of Correlates of Elevated Symptoms of Global Distress, Depression and Anxiety (OR and 95% CIs)

	Elevated Global Distress		Elevated Depression		Elevated Anxiety	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Female gender	3.3 (2.6,4.2)[b]	4.1 (3.1,5.3)[b]	3.5 (2.8,4.4)[b]	4.4 (3.5,5.5)[b]	2.8 (2.2,3.5)[b]	3.3 (2.7,4.2)[b]
Mean age	1.1 (1.0,1.1)[b]	1.1 (1.0,1.1)[b]	1.1 (1.0,1.1)[b]	1.1 (1.0,1.1)[b]	1.0 (1.0,1.0)	1.0 (1.0,1.1)
Currently attending school	1.0 (0.8,1.3)	1.0 (0.8,1.3)	0.9 (0.7,1.1)	0.9 (0.7,1.2)	0.8 (0.6,1.1)	0.9 (0.7,1.2)
Currently working	0.9 (0.7,1.2)	0.9 (0.7,1.2)	---	---	0.8 (0.6,1.1)	0.8 (0.6,1.1)
Married or engaged	0.8 (0.6,1.0)[a]	0.7 (0.6,1.0)[a]	0.6 (0.5,0.8)[b]	0.6 (0.5,0.8)[b]	0.9 (0.7,1.2)	0.9 (0.7,1.2)
Very religious	---	---	0.9 (0.8,1.2)	0.9 (0.8,1.2)	0.9 (0.7,1.1)	0.9 (0.7,1.1)
Father is alive	0.6 (0.4,0.8)[b]	0.6 (0.4,0.8)[b]	0.6 (0.4,0.9)[a]	0.6 (0.4,0.9)[a]	0.6 (0.4,0.8)[b]	0.6 (0.4,0.8)[b]
Mother is alive	0.5 (0.2,1.0)	0.5 (0.2,1.1)	0.6 (0.3,1.2)	0.6 (0.3,1.3)	0.5 (0.2,0.9)[a]	0.5 (0.2,1.0)
Fatalism	1.1 (0.9,1.3)	1.1 (0.9,1.3)	1.3 (1.1,1.5)[b]	1.2 (1.1,1.5)[a]	1.1 (0.9,1.3)	1.1 (0.9,1.3)
% chance of having a good job by age 30	1.0 (1.0,1.0)[b]	1.0 (1.0,1.0)[a]	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)[a]	1.0 (1.0,1.0)
Has ever used alcohol	2.2 (1.7,2.9)[b]	2.0 (1.5,2.7)[b]	2.0 (1.5,2.7)[b]	1.8 (1.4,2.5)[b]	2.1 (1.5,2.8)[b]	1.9 (1.4, 2.5)[b]

Politically active	1.5 (1.2,1.8)[b]	1.3 (1.1,1.6)[a]	1.5 (1.2,1.8)[b]	1.3 (1.1,1.6)[a]	1.5 (1.2,1.8)[b]	1.3 (1.1,1.6)[a]
Overall violence exposure	2.3 (1.8,3.0)[b]	---	2.3 (1.8,2.9)[b]	---	2.1 (1.6,2.8)[b]	---
Personally experienced violence	---	1.8 (1.4,2.2)[b]	---	1.8 (1.5,2.2)[b]	---	1.8 (1.5,2.2)[b]
Witnessed violence	---	1.4 (1.1,1.7)[a]	---	1.4 (1.2,1.8)[b]	---	1.3 (1.0,1.7)[a]
Vicarious violence	---	1.4 (1.2,1.8)[b]	---	1.5 (1.2,1.9)[b]	---	1.2 (1.0,1.5)

[a] $p < .05$, [b] $p < .01$

OR = Odds Ratio; CI: confidence interval

Table 4

Logistic Regression Analyses of Correlates of Elevated Symptoms of Global Distress, Depression and Anxiety in Males (OR and 95% CIs)

	Elevated Global Distress		Elevated Depression		Elevated Anxiety	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Mean age	1.1 (1.0,1.2)[b]	1.1 (1.0,1.2)[b]	1.1 (1.0,1.1)[b]	1.1 (1.0,1.1)[b]	1.0 (1.0,1.1)	1.0 (1.0,1.1)
Currently attending school	0.9 (0.6,1.3)	1.0 (0.7,1.4)	0.8 (0.6,1.0)	0.8 (0.6,1.1)	0.9 (0.6,1.3)	0.9 (0.7,1.4)
Currently working	0.8 (0.6,1.2)	0.8 (0.6,1.2)	---	---	0.8 (0.5,1.2)	0.8 (0.5,1.2)
Married or engaged	0.5 (0.3,1.0)[a]	0.5 (0.2,0.9)[a]	0.3 (0.2,0.6)[b]	0.3 (0.2,0.6)[b]	0.5 (0.3,1.1)	0.5 (0.2,1.0)[a]
Very religious	---	---	0.7 (0.5,0.9)[a]	0.7 (0.5,0.9)[b]	0.8 (0.6,1.2)	0.8 (0.6,1.2)
Father is alive	0.7 (0.4,1.2)	0.8 (0.4,1.3)	0.9 (0.5,1.5)	0.9 (0.5,1.6)	0.7 (0.4,1.1)	0.7 (0.4,1.1)
Mother is alive	0.5 (0.1,1.9)	0.5 (0.1,2.2)	0.7 (0.2,2.3)	0.7 (0.2,2.4)	0.4 (0.1,1.6)	0.5 (0.1,1.9)
Fatalism	1.2 (0.9,1.6)	1.2 (0.9,1.6)	1.3 (1.0,1.6)[a]	1.3 (1.0,1.6)	1.3 (1.0,1.7)	1.2 (0.9,1.6)
% chance of having a good job by age 30	1.0 (1.0,1.0)[b]	1.0 (1.0,1.0)[a]	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)[a]	1.0 (1.0,1.0)[a]
Has ever used alcohol	1.9 (1.3,2.8)[b]	1.8 (1.2,2.7)[b]	1.7 (1.2,2.3)[b]	1.5 (1.0,2.1)[a]	2.1 (1.4,3.0)[b]	1.9 (1.3,2.8)[b]

Politically active	1.5 (1.1,1.9)[b]	1.3 (1.0,1.7)	1.7 (1.3,2.2)[b]	1.4 (1.1,1.9)[a]	1.3 (1.0,1.8)	1.2 (0.8,1.6)
Overall violence exposure	2.4 (1.5,3.7)[b]	---	2.3 (1.6,3.5)[b]	---	2.4 (1.4,3.9)[b]	---
Personally experienced violence	---	2.1 (1.6,2.8)[b]	---	1.9 (1.5,2.5)[b]	---	2.5 (1.8,3.6)[b]
Witnessed violence	---	1.2 (0.8,1.8)	---	1.4 (0.9,2.0)	---	1.2 (0.8,1.7)
Vicarious violence	---	1.4 (1.0,2.0)[a]	---	1.5 (1.1,2.0)[a]	---	1.0 (0.7,1.4)

[a] $p < .05$, [b] $p < .01$, [c] $p < .001$

OR = Odds Ratio; CI: confidence interval

Table 5

Multiple Regression Analyses of Correlates of Elevated Symptoms of Global Distress, Depression and Anxiety in Females (OR and 95% CIs)

	Elevated Global Distress Symptoms		Elevated Depression Symptoms		Elevated Anxiety Symptoms	
Variable	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Mean age	1.0 (1.0,1.1)	1.1 (1.0,1.1)	1.0 (1.0,1.1)	1.1 (1.0,1.1)	1.0 (0.9,1.0)	1.0 (1.0,1.1)
Currently attending school	1.0 (0.7,1.4)	1.1 (0.8,1.5)	1.1 (0.8,1.5)	1.2 (0.8,1.7)	0.8 (0.6,1.1)	0.9 (0.6,1.2)
Currently working	1.2 (0.6,2.2)	1.2 (0.6,2.2)	---	---	0.9 (0.5,1.7)	0.9 (0.5,1.7)
Married or engaged	0.9 (0.7,1.2)	0.9 (0.6,1.2)	0.8 (0.6,1.2)	0.8 (0.6,1.2)	1.0 (0.7,1.4)	1.0 (0.7,1.4)
Very religious	---	---	1.3 (1.0,1.8)	1.4 (1.0,2.0)[a]	0.9 (0.7,1.3)	1.0 (0.7,1.3)
Father is alive	0.4 (0.2,0.7)[b]	0.4 (0.2,0.7)[b]	0.4 (0.2,0.7)[b]	0.4 (0.2,0.7)[b]	0.5 (0.3,0.8)[b]	0.5 (0.3,0.8)[b]
Mother is alive	0.5 (0.2,1.4)	0.6 (0.2,1.6)	0.6 (0.2,1.7)	0.6 (0.2,1.8)	0.5 (0.2,1.2)	0.5 (0.2,1.3)
Fatalism	1.0 (0.8,1.3)	1.0 (0.8,1.3)	1.2 (1.0,1.5)	1.3 (1.0,1.6)	1.0 (0.8,1.2)	1.0 (0.8,1.2)
% chance of having a good	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)	1.0 (1.0,1.0)

job by age 30						
Has ever used alcohol	3.0 (1.5,5.8)[b]	2.6 (1.4,5.1)[b]	3.9 (1.7,8.9)[b]	3.4 (1.5,8.0)[b]	2.1 (1.3,3.4)[b]	1.9 (1.1,3.1)[a]
Politically active	1.5 (1.1,2.0)[a]	1.3 (1.0,1.8)	1.3 (1.0,1.8)	1.1 (0.8,1.6)	1.6 (1.2,2.1)[b]	1.4 (1.1,1.9)[a]
Overall violence exposure	2.3 (1.7,3.1)[b]	---	2.2 (1.7,3.0)[b]	---	2.0 (1.4,2.8)[b]	---
Personally experienced violence	---	1.5 (1.1,2.0)[b]	---	1.8 (1.3,2.5)[b]	---	1.5 (1.1,1.9)[b]
Witnessed violence	---	1.5 (1.1,1.9)[b]	---	1.5 (1.1,1.9)[b]	---	1.4 (1.1,1.9)[a]
Vicarious violence	---	1.4 (1.1,1.9)[a]	---	1.6 (1.2,2.1)[b]	---	1.4 (1.0,1.8)[a]

[a] $p < .05$, [b] $p < .01$, [c] $p < .001$

OR = Odds Ratio; CI: confidence interval