Abstract

Background: Exposure to violence is a significant risk factor for the development of psychopathology in young people. Research on the mental health consequences of violence exposure in youth has focused mostly on post-traumatic stress disorder, however, the association with depression and anxiety has also been established. As a result of the longstanding Israeli–Palestinian conflict, young Palestinians are vulnerable to exposure to various types of violence.

Aims: We examined psychiatric symptomatology and its relationship to direct and indirect forms of violence exposure.

Methods: A representative household survey of 2481 Palestinian youth was conducted in 2014. Self-report measures included psychiatric symptomatology (global distress, depression, anxiety)
Exposure to violence is a significant risk factor for the development of psychopathology in children and youth as it has been found to be related to aggression, academic difficulties and symptoms of post-traumatic stress, anxiety and depression (1). Protracted exposure to violence and violence exposure (personal victimization, witnessed, vicariously heard about).

**Results:** The proportion of elevated symptoms of global distress (46%), depression (55%), and (37%) anxiety was high; 47% had been a personal victim, 71% had witnessed violence, and 69% had heard about violence experienced by someone close to them. In logistic regression analysis, controlling for other bivariate correlates, 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 4 times more likely to report elevated psychopathology, despite being less likely to experience each type of violence.

**Conclusions:** These findings suggest the need for services that cater to the mental health needs of youth in settings of high violence exposure, and that gender-specific strategies may be useful.

**Keywords:** depression, anxiety, violence exposure, youth, Palestine


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may lead young people to feel as though their safety and that of family and friends is constantly jeopardized (2). Violence exposure can take the form of personal victimization, as a witness to violence, or vicariously hearing about violence from others. While research on nonpolitical violence often makes these distinctions in considering impacts of violence on mental health (1), most research on political conflict has considered only aggregated violence exposure (3). Some research suggests that direct victimization has more detrimental effects on mental health than does the more prevalent witnessing of violence (4,5), but there are nonetheless substantial negative effects of witnessing violence (6).

Research on the mental health consequences of violence exposure in youth, including in the Middle East (7), has focused mostly on post-traumatic stress disorder; however, the associations of violence exposure with depression and anxiety have also been established in the Region, including for the Palestinian territories (8). In a study of nearly 2000 14–17-year-olds in the West Bank and Gaza, children with greater exposure to conflict-related violence had greater post-traumatic distress and more somatic complaints, with girls having more somatic complaints than boys (9). In a study in Gaza that used ratings from parents and teachers of 350 kindergarten students, psychological resilience was negatively associated with exposure to traumatic events (10).

Other studies have found no or only modest correlations between violence exposure and psychiatric symptomatology in youth [see Barber & Schluterman (11) for a review], which suggests the potential for resilience among youth exposed to ongoing violence. The risk and protective factor model of developmental psychopathology (12) highlights ecological and individual factors that either place young people 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 (13). Gender differences have also been observed, with females often being exposed to less violence overall compared with males (14), but reporting more symptoms of psychological distress, in particular internalized symptoms (e.g. depression) (15).

Most studies of adolescents or youth in the Middle East have used 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). In the present study, we used data from a unique representative household survey of Palestinian youth aged 15–24 years in the West Bank and East Jerusalem to examine the proportion 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 resilience or exacerbate the risk of mental health problems.
The longstanding Israeli–Palestinian conflict has eluded resolution for decades, with severe negative implications for the well-being of Palestinian youth and others. While sustained large scale conflict breaks out only periodically, Palestinians in the West Bank, East Jerusalem, and Gaza face continuous risks to physical security and economic well-being. For residents of the West Bank, Israeli occupation has meant the ongoing threat of arrest, beatings, and in some instances home destruction. An ever-changing system of checkpoints and road closures significantly limits the physical mobility of Palestinians across the West Bank (16). Political demonstrations against the Occupation are a recurrent aspect of the conflict. Abusive treatment by the Palestinian Authority is also frequently reported (17). As a result, young Palestinians in the West Bank (as well as East Jerusalem) are vulnerable to exposure to various types of violence as well as to indirect conflict-related stressors such as economic hardship and constraints to mobility. It is important to understand the relation of these factors to mental health.

Methods
Study design

Details of the sampling and survey procedures are provided in a previous paper (18). Briefly, this cross-sectional study drew on the 2007 census to obtain a representative sample of youth aged 15–24 years living in the West Bank and East Jerusalem. A stratified 2-stage random sample was obtained in 208 clusters in urban, rural, and refugee camp locations for a total of 2481 youth, almost equally divided among males and females. The objective of the main study was to examine proportion and patterns of health risk behaviours in the context of exposure to trauma and violence.

Recruitment and data collection was carried out in April–July 2014. For minors (under 18 years), verbal parental informed consent was obtained to conduct the interview. Separate verbal consent was obtained from all youth. Oral rather than written consent was deemed appropriate to the survey content and environment as participants could provide sensitive information without a written record that could potentially identify them. A range of other precautions were taken to ensure participant confidentiality and anonymity. For example, interviewers were strictly instructed to ensure that the youth interview was carried out in a private room or other private area. Female youth were interviewed by females and male youth by males. The study procedures were approved by RAND’s Human Subjects Protection Committee. Refusal to participate by parents/household head or youth was low, with 89% of selected participants granting consent to be interviewed.

Measures

The survey measures were administered in Arabic. Survey items were translated from English to Arabic using standard translation/back-translation methodology. All measures were developed by the study team unless otherwise noted or attribution is cited, and piloted prior to
use with the study sample.

Demographic and background characteristics included sex, age, residence (urban, rural, refugee camp), work status, refugee status, school attendance, relationship status, religiosity, and whether or not the mother and father of the interviewee were living. Household resources were captured through ownership of various consumer durables such as a car, television and microwave which were used in a factor analysis to create a household wealth index (19), with mean zero and standard deviation 1.0.

Mental health was assessed with the 25-item Hopkins Symptoms Checklist (HSCL-25) (20), which is comprised of subscales measuring anxiety and depression (10 and 15 items respectively); the total 25-item scale measures global distress. The HSCL-25 has high internal reliability (Cronbach’s alpha = 0.95) and 2-factor structure (21). Response options for each item range from 0 “not at all” to 3 “extremely”; responses within each of the 2 subscales, as well as the total scale, were 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 (22).

Exposure to violence was measured with a list of 11 events (Table 1), categorized into 3 types 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’s/friend’s/neighbour’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/no response as to whether the event was experienced, and if yes, the age at which it was last experienced was recorded. For each of the 3 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.

The assessment also covered psychosocial characteristics. Social support was measured with a single yes/no 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”? Future outlook was measured by respondents’ estimation of “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 (23), which has demonstrated good internal reliability (Cronbach’s alpha = 0.76), test–retest reliability (r = 0.71), and construct validity. 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 the mean item score was calculated such that higher scores represent greater fatalism. To assess substance use, respondents were asked if they currently use tobacco (cigarettes and waterpipe) or use alcohol, and if they have ever taken an alcoholic drink (all using a yes/no format). Political activism was assessed by asking participants if they had ever attended a political demonstration, and if so, how many times in their lifetime. A binary variable was created to represent whether or not the participant was politically active, defined as having attended at least 2 demonstrations.

Data analysis

Bivariate statistics (2-tailed, independent t-tests and chi squared tests) were used to examine correlates of the 3 measures of elevated psychiatric symptomatology (global distress, depression, anxiety). Next, logistic regression analyses examined multivariable correlates of these 3 mental health measures, controlling for bivariate correlates at the significance level of P

Results

Sample descriptives

Table 1 lists the demographic and background characteristics of the whole sample of 2481 participants, and by sex (1240 females, 1241 males). Mean age was 19.1 years, 18.5% were employed, 63.0% were attending school, 17.0% were married (substantially higher for females than males) and 26.0% were refugees, i.e. descendants of individuals who had lost land or livelihood during the 1948 or 1967 conflicts. Most refugee families do not actually live in refugee camps, which can be rural or urban.

Elevated psychiatric symptomatology and violence exposure

About half of the overall 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 (Table 1). Depression and anxiety were strongly related, with a correlation of the mean scores of 0.73 (P

A high level of violence exposure was also observed in the sample: 85.0% of youth experienced at least 1 event in their lifetime, with a mean of 2.9 (SD = 2.1; median = 3) events experienced. The mean number of events experienced in the past year alone was 0.95 (SD = 1.29; median = 1); 46.7% had been a victim of any personal 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 experienced by a relative or close friend (Table 1). The most common personally experienced violence was being beaten up or assaulted by someone other than a policeman or soldier (36%), while 12% report being beaten up or assaulted by police and 12% report being
imprisoned or held by police. The most common witnessed violence was seeing a relative/friend being beaten (58%) or witnessing a relative/friend being shot (35%). Regarding vicarious violence events, 60% had heard of a relative/friend being imprisoned and 35% had heard of a relative/friend being killed. Male youth reported exposure to more events of violence overall, as well as a greater proportion having experienced each of the 3 types of violence events, compared with females.

### Relationships between mental health and violence exposure

Elevated symptoms of global distress, depression and anxiety were each significantly associated in bivariate analysis with the sum of violence exposure events, with exposure to any of the 3 types of violence events, and with a number of other variables (Table 2). Table 3 presents multiple logistic regressions exploring these relationships. First, using any violence exposure event experienced (across all types of violence exposure) as the sole violence independent variable and including other significant bivariate correlates of elevated global distress as controls (Model 1), violence exposure remains independently associated with elevated global distress. In models using 3 variables representing any experience of the 3 types of violence events (personally experienced, witnessed, vicarious) in place of overall violence exposure (Model 2), each of these exposure variables was independently correlated with elevated global distress. Regressions predicting elevated depression and anxiety were similar, with the exception that experience of vicarious violence exposure was unrelated to elevated anxiety (Table 3).

Among other independent variables in the models, being female was associated with all 3 measures of elevated symptomatology, while 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 associated with elevated symptomology included the death of one’s father, any history of alcohol use, greater fatalism (associated with elevated depression only), and lower expectations of having a good job by the age of 30 (global distress only).

Similar results were observed in separate regressions for male and female youth, with a few exceptions: among males, witnessed violence exposure and father's death were not independently associated with any of the 3 elevated psychiatric symptomatology measures; among females, being married or engaged, fatalism, older age, and expectations of having a good job were all unrelated to any of the elevated symptomatology measures (full results from these gender-specific analyses are available as supplementary data online).

### Discussion
In this rare, 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. Furthermore, nearly half the sample had personally been the victim of violence, and over two-thirds had ever witnessed or heard about violence being perpetrated on a close friend or relative. It should be noted that while much of the reported violence exposure was likely related to the Occupation and conflict, much of it was not, at least not directly. For example, as indicated, the most common personal experience of violence was being beaten by someone other than a soldier or policeman. This is consistent with findings from the sample of high rates of engagement of youth in physical fights with others (18).

Violence exposure was associated with each of the 3 forms of elevated psychopathology (global distress, depression, anxiety), and these mental health measures were associated with each of the 3 types of violence exposure (personally experienced, witnessed, and vicariously heard about). Significantly, 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 exposure) were also independently associated with mental health symptoms. This is consistent with other studies of youth exposure to community violence that were not conducted in conflict settings (5).

Consistent with studies in other environments (4,14), gender differences were observed with regard to both mental health and violence exposure. Female youth reported significantly higher levels of mental health problems, while males reported higher exposure to violence overall and were more likely to have experienced each of the 3 types of violence events. The greater experience of violence among males may reflect gender differences in the contexts into which individuals can, or are willing to, enter, especially in a conservative environment where young females may experience family or social constraints on their movement and young men more often participate in political demonstrations. Additionally, it has been observed that in the face of occupation and conflict, Palestinian society has become more conservative and religious over the last several decades, which likely further dampens young women's independence and mobility (24). Being female was an independent correlate of higher odds of elevated symptoms of global distress, depression and anxiety, suggesting that factors independent of violence exposure contribute to Palestinian female youth experiencing higher levels of depression, anxiety and distress.

Among female youth, all 3 types of violence exposure were associated with elevated psychiatric symptomatology, and the magnitude of the relationship to symptomatology (odds ratio) was similar across each type of violence. In contrast, among males, having personally experienced violence had the strongest effects: odds ratios for global distress, depression and anxiety were at least descriptively higher for personal experience than for vicarious exposure; and witnessed
violence exposure was not associated with any of the 3 mental health measures. With male youth being exposed to more violence, they may have a higher threshold for violence contributing to emotional distress, or violence may be normalized in their day-to-day lives, resulting in direct 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. The regression analysis revealed that for young men, being married or engaged reduced the likelihood of elevated symptoms of distress or depression. 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. This protective function was not evident among female participants, consistent with other research showing that being married is protective against depression more so for men than women (25). This may reflect gender differences in the demands and stress within marriage and power differentials between men and women in relationships in the Palestinian cultural context. For female youth, a different source of support, having a father who was still alive, 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 (3,7).

Current alcohol use, reported by only 11% of the sample (18), 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 (26), including among youth in the Middle East (27). 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 males. These findings suggest that mental health among youth is influenced by expectations, outlook and locus of control regarding the future, and this may be particularly true in contexts that are characterized by ongoing exposure to violence. Youth programmes and services need to help their clients see merits in their future and opportunities for success—though this is undoubtedly very challenging given the significant stressors and environmental challenges that Palestinian youth face. However, it should be cautioned that the observed relationships may not be causal since expectations and outlook may well be conditioned by depression or distress.

Engagement in political activism was also independently associated with higher odds of
elevated psychiatric symptomatology. Here too, the cross-sectional nature of the study makes interpretation ambiguous since relationships may be bi-directional. Although experiences of political activity (including frustration with unachieved goals or witnessing violence during protests) may lead to distress, those suffering a greater emotional stress from the protracted conflict may also be more likely to participate in protests.

In addition to the cross-sectional design, the limitations of this study include the reliance on self-reporting of symptom 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, and local gender norms could result in there being a gender differential with regard to candour; for example, males may have been more comfortable disclosing substance use behaviour, 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 youth sample does offer important insights into the proportion 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, but more likely than their male counterparts to report elevated symptoms of distress, depression and anxiety. Although, as noted, gender differences in candour may be in play, it is also possible that males are more apt to normalize exposure to violence. Youth services in the Palestinian and other Middle East contexts can also be informed by our findings that identify the influences on, or correlates of, mental health 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. Both preventative and therapeutic services related to mental health challenges stemming from violence exposure are needed for youth, and our findings suggest that such services should incorporate mechanisms to enhance social support from family and sense of control over and hope for one’s future.

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**Competing interests:** None declared.
Exposition à la violence et liens avec la santé mentale chez les jeunes Palestiniens

Résumé

Contexte : L’exposition à la violence est un facteur de risque significatif pour le développement de psychopathologies chez les jeunes. La recherche sur les conséquences de l’exposition des jeunes à la violence pour leur santé mentale s’est principalement concentrée sur l’état de stress post-traumatique. Cependant, un lien avec la dépression et l’anxiété a également été établi. Du fait de l’ancienneté du conflit israélo-palestinien, les jeunes Palestiniens sont susceptibles d’être exposés à divers types de violence.

Objectifs : Nous avons examiné la symptomatologie psychiatrique en lien avec les formes directes et indirectes d’exposition à la violence.

Méthodes : Une enquête auprès des ménages a été menée en 2014 dans un échantillon représentatif de 2 481 jeunes Palestiniens. Les critères d’autoévaluation utilisés incluaient la symptomatologie psychiatrique (détresse générale, dépression, anxiété) et l’exposition à la violence (en tant que victime, témoin direct ou indirect).

Résultats : La proportion de symptômes aigus de détresse générale (46 %), de dépression (55 %) et d’anxiété (37 %) était élevée ; 47 % des personnes interrogées avaient été personnellement victimes de violence, 71 % avaient été témoins de violences et 69 % avaient entendu le récit de violences subies par une personne proche. Dans l’analyse de régression logistique, l’élimination des autres corrélats bivariés, l’exposition à un acte de violence quelconque, ainsi que chacun des trois types de violence, ont été associés de manière indépendante à chacun des trois critères de symptomatologie psychiatrique aiguë. Les jeunes femmes étaient quatre fois plus nombreuses à signaler des psychopathologies aiguës, en dépit d’un risque moins élevé d’être confrontées à chaque type de violence.

Conclusions : Ces résultats suggèrent la nécessité de mettre en place des services répondant aux besoins des jeunes en matière de santé mentale dans un contexte les exposant fortement à la violence. Ils indiquent aussi que des stratégies sexospécifiques pourraient être utiles.
Exposure to violence and its relationship to mental health among young people in Palestine

Summary

Violence exposure is one of the main risk factors for mental disorders among youth. The study focused on the consequences of violence exposure on the mental health of youth in the study area, while also highlighting the importance of relationships between violence and anxiety.

Objectives

To study the mental health and its relationship to violence exposure in young Palestinians.

Method

The study was conducted on 2014 Palestinian youth aged 16, from a total of 2481 youth. The study included questions on violence exposure (peer, sibling, and community), post-traumatic stress, personal violence (self and others), violence and mental health.

Results

55% and 46% of youth had increased post-traumatic stress and personal violence exposure respectively; 37% experienced post-traumatic stress, and 5% had attempted suicide. Anxiety increased among those exposed to violence, with 69% reporting anxiety. 71% of youth had at least one mental health disorder. The study found that youth exposed to violence had a higher likelihood of anxiety and depression, while those with anxiety had a lower likelihood of attempting suicide. The study also highlighted the importance of intervention programs and mental health services.

Conclusions

This research highlights the need for mental health services among Palestinian youth exposed to violence. The study's findings suggest that intervention programs need to be developed for these youth.

References


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