

Primary Care Clinic Attenders Under War Stress

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Abstract

Background: The threat to the individual's physical integrity and well-being as well as to those of significant others, the disruption of normal patterns of life, and property losses make wartime a highly stressful condition.

Objectives: To assess the level of psychological distress in primary care attenders in a district of Jerusalem (Gilo) that experienced long-term exposure to gunfire.

Methods: A self-administered questionnaire exploring emotional distress (anxiety and depression symptoms), gunfire exposure, patterns of help-seeking behavior, and prescription of sedative or hypnotic drugs was administered to a sample of 125 consecutive attenders to a general practitioner during a 10 week period in the autumn of 2001. Eighty-four attenders residing in Gilo were compared with 41 attenders residing in neighborhoods that had not been under fire. *T*-tests and Mann-Whitney two-sample tests were used to determine statistical significance of differences.

Results: The mean distress score was significantly higher among the Gilo residents than among their counterparts in other neighborhoods (1.1 ± 0.8 vs. 0.8 ± 0.5 , $t = 1.73$, $P < 0.01$); 15.5% of the former reported probable clinically significant distress. Emotional distress was associated with periods of intensive gunfire exposure, psychological care-seeking behavior, and the prescription of sedative or hypnotic drugs. No significant differences in distress levels were found between those living in zones of Gilo that were at differential gunfire risk, nor between those whose houses and cars were or were not damaged.

Conclusions: War-related life events would seem to be associated with elevated emotional distress. A motivated primary care physician could easily and reliably ascertain the attenders' psychological status and identify those requiring psychological support. These identification and intervention stages are facilitated if the specialized services are community-based.

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During wartime, the threat to the individual's physical integrity and well-being as well as to those of significant others, the disruption of normal patterns of life, and property losses, together constitute a highly stressful condition. Elevated psychological distress or demoralization may thus be expected, resulting, for example, in a substantial increase in the occurrence of mental health problems and the use of primary care clinics in the high risk area [1]. Primary care providers working with individuals in such areas should be aware that war stress resulting in psychological distress may require intervention by the health system [2-4].

Psychological reactions to significant life events are expressed in a variety of psychological symptoms, mainly a mixture of anxiety

and depression [5]. These non-specific responses to stressful events vary in intensity, constituting proxy measures of mild to severe psychopathology. If the extent to which these symptoms are expressed is insufficient to diagnose a specific mental disorder according to ICD or DSM criteria, then they are diagnosed as psychological distress syndrome or demoralization.

Demoralization (emotional distress) can be measured quite reliably. Perhaps no other measure of mental health has been used more often – whether in clinics or in the community; the scales used to tap it are relatively brief, highly reliable and have an acceptable degree of validity. Scales that enjoy wide popularity in Israel are the General Health Questionnaire [6], Hopkins Symptom Checklist-90 or its abridged version, the Brief Symptom Inventory [7-9]. Another often-used scale is the Psychiatric Epidemiological Research Interview-Demoralization Scale [10,11]. Of practical interest is that these scales screen apart individuals who may have emotional ill-health from those who seem to do well. The examination of variables correlated with ill or good emotional health may guide practitioners and planners with regard to risk and protective factors.

The current and protracted undeclared war of the Palestinian Authority against the Israeli civilian population has become a threatening experience for the residents of Gilo, a southern Jerusalem neighborhood that has been exposed to gunfire attacks from the bordering Palestinian towns of Beit Jala and Bethlehem. Findings in the literature, both local and international [12-15], prompted us to examine the relationship between the stress arising from the local situation and the psychological well-being of a group of Gilo residents. This information is expected to assist the mental health efforts currently conducted *in situ* by the Ministry of Health and others.

The objectives of this study were to explore the psychological distress among the residents of Gilo who attended a primary care clinic during a period of gunfire and to identify putative factors associated with their emotional distress. Several hypotheses relating war stress to emotional distress were entertained prior to starting the study, namely: a) attenders from Gilo would be more distressed than attenders from other Jerusalem neighborhoods; b) distress would be associated with residing in high risk streets in Gilo and, consequently, with the greater extent of physical and property damage; c) emotional distress would be associated with periods of gunfire attacks; and d) distress would be related to patterns of healthcare-seeking behavior and the prescription of psychotropic medication.

Methods

Setting

Gilo, a Jerusalem neighborhood with 40,000 inhabitants, borders with territories of the Palestinian Authority. Since February 2000, including the period of this study (5 September to 19 November 2001), Gilo was under frequent and, at times, intensive gunfire. According to information provided by the Gilo Community Center, the total number of attacks recorded during the said period was 243, including 67 episodes during the study period, resulting in approximately 400 injured individuals and damage to homes and other property. In December 2000, walls of concrete were built to protect the residents at risk from direct gunfire. Later, some units of the Israel Defense Forces entered (and subsequently left) the areas where the gunfire attacks originated.

The clinic

A single primary care physician (A.Y.) working in one of the primary care clinics in Gilo collected the data for this study. This clinic provides care to approximately 3,000 households in Gilo. The PCP is a family doctor with over 20 years experience, the last 8 years in Gilo. Following informed consent, all attenders seeking care for various health problems completed a self-administered questionnaire. Only 4 attenders refused to participate and 20 other patients were not enrolled because of serious medical or surgical problems (unrelated to gunfire exposure) that necessitated urgent referral to a general hospital.

Sample

A total of 125 attenders completed the questionnaire. The sample included 55.2% males ($n = 69$) with a mean age of 42.8 years (range 18–82 years) and 13.5 mean years of education (range 8–22 years). Most respondents were married ($n = 87$, 69.6%); 21 (16.8%) were single, and 17 (13.6%) were divorced or widowed. Twenty-one attenders were recent immigrants from the former Soviet Union. Of the entire sample, 84 attenders were Gilo residents (67.2%), while the remaining 41 resided in other Jerusalem neighborhoods. The groups were comparable on the selected demographic variables studied [Table 1]. A few Gilo attenders reported that they (11.9%) or their neighbors (20.2%) had been exposed to at least one gunfire attack, while 13.2% and 16.6%, respectively, reported damage to their house and/or car. None of the residents from the other city districts reported gunfire exposure. The PCP prescribed a tranquilizer or hypnotic to 11.9% attenders from Gilo and to 9.8% attenders from other neighborhoods; no statistically significant difference was found ($z = 0.36$, $P = 0.72$).

The questionnaire

The study questionnaire included: a) demographic information such as gender, age, marital status, years of education, immigration status, and length of stay in Israel, as well as the respondent's current address, Gilo (street and block) or other Jerusalem neighborhood; b) date of visit to the PCP (subsequently checked against the recording of the gunfire episodes); c) direct gunfire

Table 1. Basic characteristics of the two samples

Characteristic	Gilo residents (n=84)		Other residents (n=41)		P
	No.	%	No.	%	
Gender*					
Male	45	54.1	24	58.5	NS
Female	39	45.9	17	41.5	
Age (yr)					
Mean \pm SD	43.1 \pm 14.2		42.1 \pm 13.0		NS
Marital status*					
Unmarried	28	32.9	10	24.4	NS
Married	56	67.1	31	75.6	NS
Education (yr)					
Mean \pm SD	13.5 \pm 3.0		13.4 \pm 3.0		NS
Immigrant status*	17	20.2	4	9.7	NS
Distress score					
Mean \pm SD	1.1 \pm 0.8		0.8 \pm 0.5		0.01

Two-tailed *t*-tests: ns=nonsignificant; $P > 0.05$

* Mann-Whitney two-sample (non-matched) tests

exposure according to physical injury to self or to a significant other (two items) and damage to property (three items); and d) current and potential patterns of psychological care-seeking behavior and sedative/hypnotic drug prescription (three items).

To assess psychological distress, which was the chief dependent variable in this study, all items relevant to either depression or anxiety ($n = 17$) were extracted from two previously developed scales: the Brief Symptom Inventory [7] and the Psychiatric Epidemiology Research Interview-Demoralization Scale [10]. Subjects were asked to answer the question "How much discomfort has that problem caused you during the past month?" in relation to nine symptoms of depression (low mood, hopelessness, helplessness, worthlessness, self-dislike, feelings of loneliness, feelings of guilt, concentration difficulties, and loss of appetite) and eight symptoms of anxiety (fear, panic attacks, feelings of tension, irritability, dread, restlessness, cold sweating, and headaches). Responses were scored on a 0 to 4 point frequency scale ("never" to "very often"), with higher scores indicating greater intensity of experienced distress. The General Distress Index and depression and anxiety subscale mean scores were computed. In this study, the internal consistency of the total instrument as measured by Cronbach's alpha was excellent (0.92), and the correlation between the two subscales was high (0.81), indicating that a single dimension was measured.

Three normative levels of psychological distress were established in previous studies [8,9]: low distress level = 1.0; moderate distress level 1.01 to 2.0; and high distress level > 2.0. These cutoff points were empirically developed: the lower one was based on a sample of 154 Israeli-born Jews aged 18–69 years (GDI = 0.89, SD = 0.3), and the upper one on a sample of 125 mentally ill immigrants seeking help in psychiatric outpatient clinics (GDI = 1.93, SD = 0.9). A GDI mean score > 2.0 was used as the cutoff point, with scores higher than this value indicating clinically significant distress.

PCP = primary care physician

GDI = General Distress Index

A Hebrew and a Russian version of the questionnaire [16,17] were self-administered according to the patient's preference. The questionnaire took about 10 minutes to complete.

Data analysis

Analyses were performed using the Number Cruncher Statistical System (NCSS-2000) (NCSS Statistical Software, Kaysville, UH, USA). Cronbach's alpha and Pearson's product-moment correlation were calculated to evaluate the internal reliability consistency of the instrument and the correlation between the subscales of depression and anxiety, respectively. Two-tailed *t*-tests and Mann-Whitney two-sample (non-matched) tests were used to define the significance of differences in means and standard deviations for normally and non-parametrically distributed scores. For all analyses, the level of statistical significance was defined as < 0.05 .

Results

To test the first hypothesis – that attenders from Gilo are more distressed than those from other Jerusalem neighborhoods – we compared the mean distress scores between the two subgroups. Gilo attenders who were comparable with attenders of other neighborhoods in all demographic characteristics reported significantly higher GDI mean scores (1.1 ± 0.8 vs. 0.8 ± 0.5 , $t = 1.73$, $P < 0.01$) [Table 1]. The two groups did not differ significantly in the proportion of attenders with “normative low” (54.8% vs. 58.5%, $z = 0.40$, $P = 0.7$) and “normative moderate” (29.8% vs. 41.5%, $z = 1.30$, $P = 0.2$) levels of distress. A difference was found with regard to the “normative high” level; 13 attenders from Gilo (15.5%) compared to none from elsewhere reported high scores (>2).

To test the second hypothesis – that those residing in high risk streets for gunfire attacks were more distressed than those in low risk streets – the former ($n = 20$) were compared with the latter ($n = 64$) by mean distress scores. No significant differences in GDI mean scores were found between the two subsamples in an uncontrolled test to rule out confounders (1.2 ± 1.0 vs. 1.0 ± 0.7 ; $z = 0.45$, $P = 0.65$). Likewise, we found no significant differences in distress scores between Gilo's attenders reporting and non-reporting of physical and/or psychological injury, or property damage [Table 2].

To test the third hypothesis – that emotional distress was associated with gunfire periods – three subgroups of Gilo attenders who visited the PCP at times of varied frequency of fire were compared [Table 3]. Attenders who visited the PCP during September, following 41 gunfire attacks in August, reported higher distress mean scores than those who attended in October following

Table 2. Psychological distress in attenders from Gilo ($n = 84$) according to the type of gunfire damage, healthcare-seeking behavior, and prescribed medication

Characteristic	Psychological distress				
	No.	%	Mean	SD	P
Damage to one's house					
Yes	11	13.4	1.2	0.9	NS
No	72	86.6	1.1	0.8	
Damage to one's car					
Yes	12	14.6	0.9	0.5	NS
No	70	85.4	1.1	0.8	
Damage to neighbor's house					
Yes	33	41.2	1.2	0.8	NS
No	47	58.8	1.1	0.8	
Physical damage to oneself					
Yes	10	11.9	1.2	1.2	NS
No	74	88.1	1.1	0.8	
Physical damage to a neighbor					
Yes	17	21.5	1.3	0.8	NS
No	62	78.5	1.0	0.8	
Tranquilizers prescribed					
Yes	12	16.0	1.7	0.8	0.01
No	63	84.0	1.0	0.8	
Healthcare-seeking behavior					
Yes	12	14.3	1.7	0.9	0.05
No	72	85.7	1.1	0.8	
Healthcare-seeking intention					
Yes	12	15.4	2.0	0.8	0.001
No	66	74.6	0.9	0.7	

a month with only one attack (1.2 ± 0.8 vs. 0.7 ± 0.5 , $z = 3.01$, $P < 0.01$). Likewise, the attenders who turned for help during the month of November, following 19 attacks in the preceding month, were significantly more distressed than those who visited in October (1.5 ± 0.9 vs. 0.7 ± 0.5 , $z = 2.34$, $P < 0.05$) (recall here that the time frame for self-reporting of distress was defined as the month preceding the survey). In contrast, the attenders from the areas who had never been under fire showed monotonic low distress scores across the same time periods (September vs. October 0.8 ± 0.5 vs. 0.8 ± 0.6 , $z = 0.53$, not significant; November vs. October 0.8 ± 0.4 vs. 0.8 ± 0.6 , $z = 0.55$, not significant).

In order to test the final hypothesis – that distress is related to patterns of potential or actual care-seeking behavior and prescription of sedative or hypnotic medication – GDI mean scores were compared between Gilo's attenders who either endorsed or did not

Table 3. Mean distress scores in two groups according to time of gunfire exposure

District	September			October			z^1	November			z^2	z^3
	No.	Mean	SD	No.	Mean	SD		No.	Mean	SD		
Gilo residents	58	1.2	0.8	17	0.7	0.5	3.01**	9	1.5	0.9	1.01	2.34*
Others	20	0.8	0.5	13	0.8	0.6	0.53	8	0.8	0.4	0.55	0.04

Mann-Whitney two-sample (non-matched) tests: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

z^1 September vs. October

z^2 September vs. November

z^3 October vs. November

endorse the above items [Table 2]. Those who reported any of the above items were more distressed than those who did not (2.0 ± 0.8 vs. 0.9 ± 0.7 , $z = 4.47$, $P < 0.001$; 1.7 ± 0.8 vs. 0.8 ± 0.8 , $z = 1.99$, $P < 0.05$; 1.7 ± 0.8 vs. 1.0 ± 0.8 , $z = 2.99$, $P < 0.01$, respectively).

Discussion

To the best of our knowledge, this is the first study examining emotional distress among Gilo residents. As expected (hypothesis 1), the overall level of emotional distress was significantly higher among the Gilo-based attenders than among their counterparts from other Jerusalem neighborhoods. The emotional distress of the Gilo-based attenders correlated significantly with intense periods of gunfire (hypothesis 3), care-seeking behavior, and the prescription of sedative or hypnotic drugs (hypothesis 4). Surprisingly, the level of distress of Gilo-based attenders was unrelated to the proximity of their homes to the sources of gunfire and to physical and property damage (hypothesis 2). Thus, of the four hypotheses that we held initially, three were supported by the study data.

Previous studies have suggested that emotional distress is positively associated with demographic factors, such as female gender, older age, low education, unmarried status and immigrant status [9,18–23]. In this study, the Gilo-based attenders and those from other neighborhoods were comparable on all relevant demographic variables, thus ruling out potential bias. Our main finding, that the Gilo attenders had higher mean distress score than their counterparts from other neighborhoods, is consistent with a number of studies showing that exposure to different types of traumatic events is associated with higher levels of self-reported psychological distress [12–15].

Previous studies have shown a dose effect with regard to emotional distress [24] – namely, the higher the stimuli the higher the distress scores. Our results were mixed. Higher distress scores were found among the Gilo attenders who visited the PCP in the periods of high gunfire activity compared to those who visited during the periods of low activity. The association is buttressed by contrasting the monotonic scores across the same periods among attenders from gunfire-free Jerusalem neighborhoods.

Curiously, however, there was no significant relationship between distress levels and residence in the Gilo high risk streets as well as between distress and episodes of injury or property damage. The study by Prager and Solomon [25] during the 1991 Gulf War showed that psychological symptoms and behavioral reactions were not associated with the proximity to areas hit by missiles. However, methodologic issues, sample size and unavoidable selectivity prevent us from interpreting our findings. Our analysis did not rule out confounders because of the relatively small number of cases, and Gilo residents who were injured or may have had higher levels of emotional distress could have been offered help or could have sought help from specialized mental health services and not from the PCP.

Our study does allow us, however, to contrast our results with those obtained by Lerner and Zilber [14] in their study conducted after the Gulf War. The authors found that in a large group of civilians at risk for distress (recent immigrants from the former Soviet Union) the overall level of distress post-war was not higher

than pre-war levels. It should be noted here that our positive findings were derived from a population currently undergoing war stress; in Lerner and Zilber's study the second distress measure was taken after the threat had subsided.

In conclusion, it has been shown repeatedly that an easy-to-administer questionnaire may assist a primary care practitioner to identify attenders undergoing emotional distress. This action by a PCP is even more necessary when the attenders face intense stresses, such as those generated by war. To be truly effective, however, psychological interventions by general practitioners in wartime, as well as in peacetime, need to be supported by specialized services; when the latter are community-based, such support is more feasible.

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