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Abstract

Background: In recent decades entire populations have been living under chronic strain, apprehension and violence. This is the case for Palestinians. Despite the increased volume of mass media attention on this situation, little is known about the psychological effects of this condition on this population.

Aims: The study was designed to investigate the lifetime and one-month prevalence of major depression episode (MDE) in a multi-stage sample of 916 adult Palestinians drawn from the Al-Aqsa Intifada.

Methods: The survey was based on personal interviews and was carried out from February to September 2007. The clinical examination used DSM-IV criteria for the detection of MDE, extracted from SCID-I. Data, suicidal behaviour, previous help seeking, medication use and exposure to trauma were also collected.

Results: Lifetime and one-month prevalence of MDE was found to be 24.3% and 10.6%, respectively. Male Palestinians suffered from slightly higher rates of MDE than their female counterparts, but this difference was not statistically significant. Being widowed and living in towns in West Bank also increased the likelihood to develop MDE. A comparison of prevalence rates in refugee and non-refugee populations showed no significant differences. This could be explained by the fact that though refugees were forcibly displaced, they were living among compatriots (non-refugees), thus both groups were experiencing the same sociopolitical adversities. Being also exposed to traumatic events increased the risk of suffering from MDE.

Conclusions: This study provides evidence that a population under continuous strain and apprehension, living in unremitting socioeconomic deprivation, is more likely to suffer from major depression.

Keywords

depression, Palestine, community study, refugees, apprehension

Introduction

Several social stressors, such as familial disruption, unemployment, socioeconomic deprivation and poverty, have been recognized as risk factors for the development of depressive disorders, while less emphasis has been put on the role of mass political violence and related losses. This stands in contrast to the extended literature on the relationship between experiencing distress and the manifestation of post-traumatic stress disorder (PTSD) (Breslau, 2001; Brown and Moran, 1997; Horesh, 2008; Link et al., 1993; Marshall et al., 2005; Monroe et al., 2001; Schuster et al., 2001; Tennant, 2002).

In recent decades we have witnessed entire populations under chronic strain and apprehension, exposed to various sociopolitical adversities, encompassing traumatic experiences. This is the case for Palestinians, living under military occupation (El Sarraj, 1991; Mousa and Madi, 2003; Murthy, 2007). For, despite the increasing mass media reports on the long-term Israeli–Palestinian conflicts, very little is known about the local population's health and well-being.

The existing data on the mental health problems of Palestinian populations in West Bank and Gaza Strip come from studies that have mainly focused on children and adolescents (Abu Hein et al., 1993; Elbebour et al., 2007; Khamis, 2008a; Miller et al., 1999; Qouta, 2003; Qouta et al., 1998, 2003, 2007; Qouta and Odeb, 2005; Thabet et al., 2002, 2006; Thabet and Vostanis, 2001; Zakrisson et al., 2004). A common finding in all these studies was the high

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rates of PTSD, ranging from 32.7% to 54.0%, among children living in areas of bombardments, and 59% among children exposed to the demolition of their home.

In a recent study by Khamis (2008a) among 179 boys injured during Al-Aqsa Intifada, the prevalence of PTSD reached 76.5%, with excess risk for comorbidity with anxiety and depression. Concerning the adult population, two studies were carried out in Gaza Strip. The first also included population samples from Algeria, Cambodia and Ethiopia (De Jong et al., 2001) and focused on the prevalence of common mental disorders. The main finding was that PTSD was the most frequent mental disorder in the Gaza and Algerian populations. The second study (Punamaki et al., 2005), based on a sample of 585 Gaza Strip residents, showed higher rates of PTSD among males than females (24% and 16%, respectively).

Regarding the prevalence of depressive disorders, there have been two studies conducted in Gaza, the first among families of Al-Aqsa Intifada victims (Sbahe, 2001) and the second in West Bank dealing with the mental health status of unmarried Palestinian women (Manasra, 2003).

Using self-reported symptoms of depression, Sbahe (2001) found that 33.3% of family members of Al-Aqsa Intifada victims suffered from depressive psychopathology. Manasra (2003) reported that 32.2% and 8% of unmarried women were found to have developed moderate and severe depression, respectively. It is of note that depressive symptoms were estimated by using non-diagnostic screening instruments (SCL 90).

The present study focuses on the investigation of the prevalence of clinical depression in West Bank for the following reasons. Depression is allegedly linked with 'object loss' (Abraham, 1948). Loss of lives, destruction of property and serious economic deprivation with extensive unemployment rates are common phenomena of Palestinian life. Furthermore, loss of self-esteem and learned helplessness represent an essential component of major depression (Seligman, 1975). Traumatized self-esteem results from common episodes of humiliation and repression in West Bank (El Sarraj, 1991). Finally, learned helplessness is a possible effect of the prolonged sociopolitical dead-end situation in which the residents of this area are unable to terminate (Qouta, 2003).

To the authors' knowledge, there is no general population cross-sectional study in West Bank of Palestine to examine the main nosological dimensions of psychopathology such as MDE.

Aims

The purpose of this study was twofold: (1) to determine the prevalence of MDE among a general population sample of adult Palestinians following the extreme political violence of Al-Aqsa Intifada, and (2) to predict MDE using pre-depression variables (e.g. age, gender, occupation, marital status, income, place of residence, social status) and traumatic exposure.

With regard to previous literature on the epidemiology of depression on specific populations, three main hypotheses were formulated.

1. People under continuous strain and apprehension are more likely to develop major depression.
2. Females are prone to suffer more from depression than males.
3. Refugees are more likely to experience MDE.

Methods and material

The setting

Palestine was a unified territory until the Arab–Israeli war of 1948 and the establishment of the State of Israel. The West Bank of Palestine is now an area of 5,800 km². In 2005 the population of West Bank and Gaza was 3.1 million. During the wars of 1947, 1948 and 1967, 1.2 million Palestinians were displaced from 631 villages and cities such as Jerusalem (Palestinian Central Bureau of Statistics (PCBS), 2006). The area has been the centre of continuous oppression, violence, resistance and uprisings (Khamis, 2008b). In the Palestinian territories during the period of Al-Aqsa Intifada from September 2000 to April 2007, more than 48,000 persons were injured and hundreds were killed (Palestine Red Crescent Society, 2007). During the same period, 7,800 homes were demolished in addition to the 600 villages destroyed during the Arab–Israeli wars (PCBS, 2006). From 2003 to 2006 the number of villages affected by the Israeli wall reached 159 and 25,000 people were displaced (PCBS, 2006).

Sampling

The study was based on a multi-stage sample of Palestinians aged 20–70, residing in four geographical areas, two in the north of West Bank (Tulkarm and Jenin) one in the middle (Rammalah) and one in the south (Bethlehem). The sample was drawn from three different locations: the towns, villages and refugees camps of each geographical area.

The sample involved a probability random selection of households, within the selected neighbourhoods, across the four geographic areas, covering a total of 850,450 inhabitants, with an adult population of 387,000. A household-to-household selection process was carried out across each area dwelling block (neighbourhood). The neighborhoods of each town, village or camp in the four different locations were randomly assigned. The interviewer used random lists of blocks; each block was selected according to its spatial distribution and density. Another random number list of households was used by the interviewer to select the household. Finally, the interviewer used a Kish grid to select one subject from each household who fulfilled the selection criteria, such as age (20–70 years) and gender.

The interviewer completed a selection grid, filling the vertical axis with all eligible household members aged 20 and over, first the males and then the females, in descending order of age. In the horizontal axis, all persons listed within the household were given serial numbers (1, 2, ... n). The interviewer made the selection by referring the two lines of figures printed on the grid. Each eligible person in a household of a given size had an equal chance of being selected. The criterion for exclusion was severe cognitive impairment.

The sample from four refugee camps was drawn through the same procedure, given the fact that people with the identity of refugee were living in small dwellings blocks in areas called 'camps'.

The final sample comprised 916 individuals, all agreeing to give their consent for participation in the study. Refusal rate was found to be 8%. The sample size in each of the four areas was 1/1,000 inhabitants. The proportion of age clusters by gender of the sample and the corresponding age groups of the local general population were almost identical (PCBS, 2006). The proportions of age groups 20–29 and 30–39 of the sample were 26.9% and 29.1%, respectively, compared to those of the general population census of 31.1% and 29.5%. For proportions of age groups 40–49, 50–59 and ≥ 60 were found to be 17.3%, 16.5% and 10.0%, respectively, corresponding to 18.0%, 16.8% and 10.3% of the general population.

Interview

The interview was carried out by the second authors, a native of Tulkarm, between February and September 2007. The data collection process started and ended during the effect of the Al-Aqsa Intifada. Completion of the interview required 60 minutes, with an average of 45 minutes taken.

Instrumentation

The sociodemographics form. The personal sociodemographic characteristics of gender, marital status, occupation, place of residence, social status (refugee or not) were recorded in this form.

The Traumatic Events Index. The index was based on seven traumatic life events that each respondent might have experienced in their lifetime. The list of specific traumatic events comprised seven categories: (1) loss of a family member or relative, (2) serious injury of a loved one, (3) being jailed, (4) suffering from injuries, (5) being arrested, (6) witnessing their home demolition, and (7) loss of valuable property. All 'yes' responses were given a value of '1' and were totalled to form the list (range 0–7). Higher scores indicate greater exposure to events.

The clinical interview. This comprised the screening of lifetime and one-month prevalence of MDE and PTSD. The detection of MDE and PTSD was made possible by

the application of the relevant modules of the Structured Clinical Interview for DSM-IV disorders (American Psychiatric Association, 1994; First et al., 1995). This part was translated from the English by a bilingual Arab. The items were translated back into English and compared to the original. It is of note that all nine symptoms criteria for the diagnosis of MDE were recorded for each respondent. Additional information was elicited on (1) suicidal behaviour (any previous attempt), (2) help seeking from a psychologist, psychiatrist or social worker (over the course of the lifetime), and (3) medication ever used (prescribed or not).

The issue of comorbidity of MDE/PTSD is being submitted elsewhere.

The reliability of the SCID-I module for MDE was tested by the clinical examination of 50 outpatients of Arab origin who were attending an outpatient psychiatric clinic in Athens, by two independent raters: (1) an Arab-speaking psychiatrist and (2) the second author. Of these patients, 32 and 29 were diagnosed as suffering from MDE by the first and second rater, respectively. The estimation of the agreement on diagnosis of MDE was made possible by the computation of the K coefficient of agreement, which was found to be 0.87, $z = 12.00$, $p < 0.001$, meaning that the interrater reliability of DSM-IV criteria for MDE was high.

Data analysis

The statistical program SPSS 11.0 (SPSS, 1999) was used to perform χ^2 tests for categorical variables. For dichotomous variables, Yates' correction for 1 degree of freedom was applied. Logistic regression analysis with the stepwise method was performed with seven independent variables: age, gender, occupation, marital status, income, place of residence and social status (refugee/non-refugee). The number of traumatic events exposed to were also included to distinguish the depressed from non-depressed cases.

Dummy variables coding was used on the categorical variables to enter them into the logistic regression.

The Ethical/Deontological Committee of the Faculty of Nursing of the National University of Athens approved this study.

Results

Sociodemographics of the sample

The ratio of males to females in the West Bank sample was almost 1:1 and 64.5% were married (Table 1). With respect to their occupation and place of residence, 34% were found to be employees, mainly in the public sector of the Palestinian Authority, and 38.3% were residents of villages. Another 31.2% were living in refugee camps. Over half (54.9%) were dependent on welfare benefit or had an income of less than US\$300 per month. Almost half of the

sample had the identity of refugee, having been forcibly displaced from other parts of Palestine in recent decades. The mean age of the sample was 39.71 (± 17.0) years.

Prevalence of MDE

The rates of lifetime and one-month prevalence of MDE among males were 25.7% and 11.3%, respectively; rates for females were 22.9% and 9.7%, respectively (Table 1). This difference was not statistically significant. Depression was manifested mainly by a plethora of somatic symptoms and complaints (chest pain, tension), agitation (restlessness), loss of energy, insomnia and depressed mood. Symptoms of ideas of guilt, sin, trouble concentrating, and ideas of worthlessness were found to be less frequent (data not shown).

Divorced and widowed individuals were found to exhibit the highest lifetime and one-month prevalence rates of MDE (Table 1). Statistically significant differences ($p < 0.02$) were observed in the one-month prevalence rates of MDE between the four categories of marital status. No statistically significant differences were found in the lifetime

and one-month prevalence rates of MDE in the categories of occupation, place of residence and income (Table 1).

MDE among refugees

The lifetime and one-month prevalence of MDE among the refugees were found to be 25.4% and 21.3%, respectively (Table 1). It should be noted that the lifetime prevalence of MDE among respondents living in refugee camps in West Bank was 23.1%, compared to 30% and 26% for the respondents who were living in the towns and villages, respectively; this difference was not statistically significant. With respect to exposure to traumatic events, 85% of males and 69% of females confirmed serious stressful experiences, ranging from two to six events (data not shown).

Suicidal behaviour

Of the 117 and 106 identified cases of depressed males and females, 76% of males and 60.3% of females reported that they had recently wanted to commit suicide; 43.8% of

Table 1. Sociodemographics and prevalence (lifetime and one month) MDE among the sample of West Bank Palestinians ($N = 916$)

Variables		n	%	Lifetime prevalence				One-month prevalence							
				Cases	%	SE	<i>p</i>	Cases	%	SE	<i>p</i>				
Gender	Male	455	49.7	117	25.7	1.5	χ^2_{Yates}	0.25	52	11.3	1.5	χ^2_{Yates}	0.85		
	Female	461	50.3	106	22.9	1.1			45	9.7	1.1			0.85	
Marital status	Total	916	100.0	22.3	24.3	1.4	df 1		97	10.6	1.4	df 1			
	Single	276	30.0	64	23.1	1.4			χ^2	20	7.2			0.8	χ^2
Occupation	Married	589	64.5	139	23.6	1.4	7.230	0.10	66	11.2	1.4	10.018	< 0.02		
	Divorced	18	2.0	8	44.5	2.6			df 3	4	22.3			1.3	df 3
	Widow	33	3.5	12	36.3	2.1				7	21.2			1.1	
	Employee	316	34.5	63	19.9	1.1			χ^2	30	9.5			0.8	χ^2
Place of residence	Worker	190	20.7	56	29.5	1.9	7.047	0.10	25	13.1	1.0	3.226	0.50		
	Student	132	14.4	37	28.0	1.8			df 3	10	7.6			0.6	df 3
	Other	278	32.4	67	24.1	1.4				32	11.5			0.9	
	Town	281	30.5	66	23.5	1.4			χ^2	23	8.1			0.6	χ^2
Income	Village	350	38.3	21	26.0	1.5	df 2	0.75	38	10.8	0.9	3.005	0.25		
	Refugee camp	285	31.2	66	23.1	1.4				36	12.6			1.1	df 2
	< 300\$	595	54.9	154	25.8	1.5			χ^2	65	10.9			0.9	χ^2
Social status	US\$300–600	259	28.3	54	20.8	1.1	df 2	0.50	26	10.0	0.8	0.138	0.95		
	> 600\$	62	6.8	15	24.1	1.4				6	9.7			0.7	df 2
	Refugee	473	51.5	120	25.4	1.5			χ^2_{Yates}	52	11.0			0.9	χ^2_{Yates}
	Non-refugee	443	48.5	103	23.3	1.4	df 1	0.75	45	10.2	0.7	df 1	0.268		

Table 2. Prevalence of lifetime MDE and suicidal behaviour among the sample of West Bank Palestinians

Gender	Depressed cases		I wanted to commit suicide		I had attempted suicide	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Male	117	100.0	89	76.0	39	43.8
Female	106	100.0	64	60.3	37	57.8

males who expressed death wishes and 57.8% of the suicidal females reported that they had attempted suicide in the past (Table 2).

Help seeking

The results showed that 39.3% and 50.0% of the depressed males and females (lifetime prevalence of MDE) reported that they had sought help in their lifetime from a mental health professional for psychosocial help.

Medication use

All males and females who had previously visited a mental health professional confirmed the use of medication, mainly antidepressants. Additionally, 18 males and three females who were identified as suffering from MDE mentioned using unprescribed medication.

Factors affecting the development of MDE

The logistic regression results are shown in Table 3.

Marital status (being widowed or divorced) increased the probability of experiencing MDE (past or new) by 1.5 times. Living in a town increased the likelihood of suffering from lifetime or one-month MDE by 1.99 and 1.39 times, respectively. Finally, being exposed to a number of traumatic

events increased the probability of lifetime and one-month MDE by 2.4 times and 1.6 times, respectively.

Discussion

The hypothesis that people under continuous strain and apprehension are more likely to develop MDE was confirmed by the finding that lifetime and one-month prevalence rates of MDE were found to be two or three times as high than those reported by other general population surveys (Ayso-Mateos et al., 2001; Kessler et al., 1994, 2003; Korkeila et al., 2007; Madianos and Stefanis, 1992; Regier et al., 1988; Robins and Regier, 1991). However it should be noted that those studies were carried out in rather stable Western sociopolitical environments.

In both National Comorbidity Studies in the US, the prevalence rates of MDE were much lower compared with the present results (Kessler et al., 1994, 2003). In Greece, in 1978 and 1984, the one-month prevalence of MDE was found to be 3.6% and 5.4%, respectively (Madianos and Stefanis, 1992). In the European study on the epidemiology of depressive disorders the 12-month prevalence rates ranged from 5.9% in a Finnish urban area to 17.1% in England (urban area) (Ayso-Mateos et al., 2001). It is of note that these rates included MDE, dysthymic and adjustment disorders with depressed mood.

Table 3. Logistic regression analysis results – dependent variable: Depressed/non-depressed among the sample of West Bank Palestinians (*N* = 916)

Variables	Lifetime prevalence				One-month prevalence			
	B	SE	OR	95% CI	B	SE	OR	95% CI
Gender	-0.148	0.154	0.863	0.63–1.16	-0.176	0.215	0.838	0.55–1.27
Age	0.037	0.058	1.037	0.92–1.17	0.125	0.080	1.130	0.96–1.32
Marital status	-1.234	0.177	1.25*	0.97–1.54	0.448	0.149	1.561**	1.16–2.09
Occupation	-0.000	0.051	1.000	0.90–1.10	-0.028	0.071	0.973	0.84–1.11
Income	-0.104	0.083	0.903	0.76–1.06	-0.044	0.115	0.957	0.76–1.19
Place of residence	-1.309	0.198	1.991**	1.35–2.40	-0.838	0.138	1.391*	0.98–2.48
Social Status (refugee/non-refugee)	-0.115	0.394	0.895	0.65–1.31	-0.481	0.191	0.804	0.61–1.11
Traumatic Events Index	1.301	0.220	2.433**	1.46–3.07	0.497	0.193	1.648*	1.19–2.16

* $p < 0.05$, ** $p < 0.01$

Another collaborative study in five European countries has shown 12-month MDE rates ranging from 7.3% in Finland to 9.8% in France, with an average rate of 9.1% (Korkeila et al., 2007).

In the Arab world, two epidemiological surveys in the 1980s in Egypt showed prevalence rates of depressive symptomatology (not MDE) in urban and rural populations of 11.4% and 19.7%, respectively (Okasha et al., 1988). Of the urban population sample, only 1.9% was given a DSM-III-R diagnosis of major depression. In another Egyptian study, the lifetime prevalence of MDE was found to be 11% (Khatwa and Abdon, 1999). However, in an epidemiological study carried out in four communities differentially exposed to the Lebanon wars, the 12-month prevalence rates of DSM-III-R MDE were found to range between 16.3% and 41.9% (Karan et al., 1998). It becomes apparent that exposure to war trauma causes severe emotional problems, a similar finding to the present study.

A possible explanation of this magnitude of psychopathologic morbidity in West Bank is the chronic toxic exposure of Palestinians to stressors such as sociopolitical instability, day-by-day escalation of mass violence, economic deprivation and the high rate of unemployment reaching 60%. The most important stressor is the lack of hope for the future. The vast majority of males in this sample (85%) and 69% of females confirmed experiencing a serious traumatic event.

This chronic situation, with no sign of ending, causes feelings of hopelessness, helplessness and depression. Brugha et al. (1985) defined a list of long-term threatening experiences that are implicated in the genesis of depressed mood and other psychological disorders; this list includes most of the previously described stressful life events. This situation of despair is also reflected in the rates of suicidal ideation and behaviour among the present sample of Palestinians from West Bank. A previous study by Abdel-Khalek et al. (2006) reported death obsession levels among adult West Bank Palestinians to be higher than their Spanish, UK and US counterparts. However, death ideation scores were found to be lower among Palestinians than other Arabs living in Kuwait, Syria, Egypt and Lebanon. It may be that the low scores of Palestinians might reflect their adaptation to strife and violence, a finding not compatible with the present study.

Comparing the present results to those of a similar study by Zilber et al. (2001) conducted in Israel among repatriated Jews, shows that the rates of MDE reported there were much lower (5.9%). Even comparing the rates of MDE found in New York City in the aftermath of the World Trade Center attacks (Schenger et al., 2007) shows a much higher rate in the present Palestinian population.

The second hypothesis of this study regarding the gender differences in the prevalence of MDE was not confirmed. Palestinian males showed a slighter higher, but non-significant, prevalence rate of MDE, despite the well-documented finding

of a 1:2 ratio (male: female) in almost all cross-sectional studies (Ayso-Mateos et al., 2001; Kessler et al., 1994, 2003; Korkeila et al., 2007; Madianos and Stefanis, 1992; Regier et al., 1988; Robins and Regier, 1991). In some other epidemiological studies carried out in Arab countries such as Egypt, males were also found to be more depressed than females (Khatwa and Abdon, 1999; Okasha et al., 1988). The Palestinian man is more exposed to trauma, facing difficult life situations, with the responsibility to feed other family members (wife, children, parents) while coping with extremely limited resources. In addition, the daily physical and psychological strains of political repression are resulting in confusion and stress. The man is becoming unable to achieve his normal social position and feels useless, secluded and abused (Qouta, 2003). In contrast, the role of the Palestinian woman is focused on child rearing and managing the house, and exposure outside the family home is avoided (Khamis, 2008b; Manasra, 2003).

The refugee and non-refugee populations had almost similar lifetime and one-month prevalence rates of MDE, therefore the third hypothesis was not confirmed. This is in contrast with the consistent finding that the status of refugee is linked to increased psychiatric morbidity (Hollifield et al., 2002). This difference could be explained by the fact that the refugees in the present study were living among compatriots not far from their native homes, and were being exposed to the same sociopolitical adversities as non-refugees. Support for this explanation of the similarity in refugee and non-refugee MDE prevalence rates comes from El Sarraj (1991), who says that the disruptive political and socioeconomic atmosphere is dispersed in all demographic areas, affecting everyone. Almost half of the sample were refugees who had been displaced from other parts of Palestine, mainly from the Jerusalem area and the villages destroyed during the previous wars and the recent construction of the wall (PCBS, 2006).

Another important issue raised from this study is that of help seeking. Almost half of the people identified as previously or currently depressed had sought professional help and were also receiving medication. It seems that despite the political turmoil, the delivery of mental health-care by the community-based psychiatric outpatient clinics in the cities of West Bank is satisfactory and is reaching a significant proportion of the people who need help (Murad, 1999).

Finally, marital status (being a widowed or divorced) and the place of residence (living in a town) were revealed by multivariate analysis as predictors of being chronically or recently depressed. A partial explanation for this could be the increased violence in the towns of West Bank compared to small villages (Palestine Red Crescent Society, 2007). Being also exposed to traumatic events increased the likelihood of developing major depression, a finding compatible with the international literature (Korkeila et al., 2007; Madianos and Stefanis, 1992; Regier et al., 1988).

Limitations

One limitation of this study is its cross-sectional design, which precludes causal inferences. Moreover, due to the lack of adequate financial support, less common mental disorders were excluded from the clinical investigation.

Finally, this study was limited to one half of the Palestinian Authority area, so the results may not fully generalizable to Gaza Strip, which suffers more political unrest, violence and poverty.

Conclusion

The findings of this study contribute to the literature, highlighting that in populations with chronic strain, violence and economic deprivation, lifetime and current rates of MDE are high, affecting men and women as well as refugees and non-refugees equally, compared to populations living in non-disruptive sociopolitical contexts.

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