Isr J Psychiatry Relat Sci Vol 44 No. 2 (2007) 94–103

Prevalence of Mood and Anxiety Disorders in the Community: Results from the Israel National Health Survey

Daphna Levinson, PhD,[1] Nelly Zilber, D. ès Sc,[2,3] Yaacov Lerner, MD,[2] Alexander Grinshpoon, MD,[1] and Itzhak Levav, MD[1]

1 *Ministry of Health, Jerusalem, Israel*

2 *Falk Institute for Mental Health Studies, Jerusalem, Israel*

3 *French Research Center of Jerusalem, Israel*

Abstract: Objective: To estimate the 12-month and lifetime prevalence rates of mood and anxiety disorders in Israel and their socio-demographic correlates. *Method*: A representative sample of respondents extracted from the National Population Register of non-institutionalized residents, aged 21 or older, were interviewed at home between May, 2003, and April, 2004. DSM-IV disorders were assessed using a revised version of the Composite International Diagnostic Interview. *Results*: Seventeen percent of the sampled adult population reported a lifetime occurrence of a mood or anxiety disorder, while nearly one in 10 (9.7%) reported a mood or anxiety disorder occurring during the previous 12 months. Mood disorders were twice as common as anxiety disorders. *Conclusion*: Contrary to expectations born out of Israel's unique life circumstances, the prevalence of mood or anxiety disorders fall within the range of other western countries. However, given the current age structure and the age of onset of these disorders, their total burden in the near future is likely to increase.

The Israel National Health Survey is the first country-wide study designed to estimate the prevalence rates of common mental disorders in the adult population. Until now, psychiatric epidemiological studies conducted in Israel covered either limited population subgroups in the community or persons in treatment, and, often, they applied measures of non-specific distress rather than standardized diagnostic instruments (1–3). The prevalence rate of the common mental disorders (anxiety and depressive disorders) among all adults has thus remained unknown. The present survey, designed to fill this vacuum, permits a more accurate estimation of the magnitude of the affected population and the need for services.

National surveys of psychiatric disorders carried out over the last 20 years in western countries in probability samples of the general population have shown that the common mental disorders affect from one in three (4) to one in two (5) persons over their lifetime. A simple extrapolation of those findings would not necessarily apply to Israel. The adult Jewish-Israeli population differs from other populations by its relatively frequent exposure to war and terrorism (6), its experience of physical dislocation or immigration (7) and the legacy of the Holocaust (8). As for the Arab-Israelis, they might be affected by their minority status and the psychological effects of the Arab-Israeli conflict. All these factors have been assumed to increase the level of stress in daily life and, presumably, become reflected in an increased risk of mental health problems (9, 10).

The primary objective of the paper is to estimate the lifetime and 12-month prevalence rates of mood and anxiety disorders and their socio-demographic correlates.

Methods

The Israeli component of the World Mental Health Survey followed the procedures established by it (11). The sample (see Levinson et. al. in this issue) was extracted from the National Population Register (NPR) and comprised non-institutionalized *de jure* residents aged 21 and over. The sample was designed to reflect the distribution in the general population of selected gender-age-population groups (Arabs; post-1990 immigrants from the former U.S.S.R.; and

Address for Correspondence: D. Levinson, PhD, Mental Health Services, Ministry of Health, 2 Ben Tabai St., Jerusalem 91010, Israel. E-mail: Daphna.Levinson@moh.health.gov.il

other Jews, both Israel-born or born elsewhere). The interviewee sample was weighted back to the total population to compensate for unequal selection probabilities resulting from disproportionate stratification, clustering effects and non-response. The weights were adjusted to make weighted sample totals conform to known population totals taken from reliable Central Bureau of Statistics (CBS) sources. Face-to-face interviews at the respondents' homes were conducted from May 2003 to April 2004, in Arabic, Hebrew or Russian. The survey was administered using laptop computer-assisted personal interview (CAPI) methods by professional survey interviewers trained and supervised by the CBS. A letter signed by the Government Statistician, explaining the purpose of the survey and the rights of respondents, was sent to each potential respondent a few days prior to the first contact attempt. Upon making in-person contact with the sampled respondent, the interviewer explained the survey again and obtained verbal informed consent. Interviews took on average 60 minutes. The overall response rate was 73% (88% among Arab-Israelis and 71% among Jewish-Israelis), totaling 4,859 completed interviews. There were no replacements. A Human Subjects Committee approved the study.

Study variables

This report covers the following sections of the interview schedule:

Socio-demographic. A standard questionnaire on socio-demographic variables (e.g., age, gender, origin, ethnic national group, marital and employment status, education, income, etc.) was administered to all respondents.

Diagnostic Assessment. The diagnostic instrument applied in the World Mental Health Survey (WMH) was the Composite International Diagnostic Interview (CIDI) (11), a fully-structured diagnostic instrument which assesses the lifetime and recent prevalence of selected psychiatric disorders according to both the ICD-10 and the DSM-IV classification systems. In our survey, the following disorders were assessed: anxiety disorders (panic disorder, generalized anxiety disorder [GAD], agoraphobia without panic disorder, and post-traumatic stress disorder [PTSD]); mood disorders (major depressive disorder, dysthymia, bipolar I and II disorders); and substance abuse disorders (alcohol abuse, alcohol dependency, drug abuse, drug dependency). The anxiety disorders excluded specific phobias or social phobia. Prevalence estimates of mental disorders were determined by whether respondents' past or current symptoms met the 12-month and/or lifetime diagnostic criteria for DSM-IV disorder. For each disorder, a screening sub-questionnaire was administered to each respondent. All participants answering positively to a specific screening item were asked the questions in the respective diagnostic section of the main questionnaire. Organic exclusion criteria were taken into account in determining DSM-IV diagnoses.

Age of onset. Retrospective age-of-onset replies were obtained using the direct question: "How old were you the first time you had the symptoms?" Respondents who could not remember when the symptoms begun were asked whether it was before they started school, before their teens or later.

Disability. The Sheehan Disability Scale (12) was used to measure role impairment due to a mental disorder for each of the diagnosed disorders. This scale assesses disability in work role performance, household maintenance, social life, and intimate relationships on a 0–10 visual analog measure with verbal descriptors. Disability scores and the respective categories range from none (0), mild (1–3), moderate (4–6), severe (7–9) and very severe (10).

Severity. Respondents who reported a mood or anxiety DSM-IV disorder (AMAD) in the past 12 months were grouped according to three levels of disorder severity:

Severe level: respondents had either Bipolar I disorder or substance dependence with a physiological dependence syndrome or admitted a suicide attempt in the past 12 months or reported at least two areas of role functioning with severe role impairment due to a mental disorder, as measured by the disorder-specific Sheehan Disability Scale (12).

Moderate level: the disorder did not meet the criteria of severe disorder, but the impairment due to mental disorder ranked at least moderate on the Sheehan Disability Scale, or the respondent had substance dependence without physiological signs.

Mild level: all other respondents were classified as having a mild level of disorder.

Analysis

The data were weighted by making the appropriate adjustments for differential selection probabilities and response rates (see article on methods in this issue). Estimates of prevalence rates are presented as percentages with standard errors. The Kaplan-Meier method (13) was used to generate age-at-onset curves. Logistic regression analysis (14) was used to establish the demographic correlates of prevalence. The logistic regression coefficients were transformed into odds ratios (ORs) for ease of interpretation. Ninety-five percent confidence intervals (CIs) were estimated using the Taylor series linearization method, using the SUDAAN software package (15).

Table 1. *Distribution of the Israel National Health Survey sample by socio-demographic characteristics (raw numbers and weighted proportions)*

Variables	Total		Males		Females	
	N	%	N	%	N	%
Age groups						
< 35	1585	35	796	36	789	34
35–49	1317	28	669	28	648	27
50–64	1080	21	547	21	533	22
65+	877	16	368	15	509	17
Population groups						
Jews*	4200	87	2056	87	2144	88
Arabs	659	13	324	13	335	12
Origin						
Israel-born	2759	59	1399	61	1360	57
Immigrants	2100	41	981	39	1119	43
Family Status						
Never married	900	19	509	22	391	16
Married/cohabiting	3229	68	1664	71	1565	65
Separated/widowed/divorced	730	13	207	7	523	19
Education						
None, primary or some secondary	1068	22	517	22	551	21
Complete secondary	1728	37	850	36	878	37
Post-secondary	800	16	423	18	377	16
Complete first degree	1263	25	590	24	673	26
Employment Status						
Working	3030	60	1714	70	1316	51
Homemaker	245	6	6	0	239	11
Retired	813	15	313	13	500	18
Student	120	4	67	4	53	3
Other	651	15	280	13	371	17

* Includes Israelis not registered as Jews or Arabs

Results

Socio-demographic characteristics

The characteristics of the study sample are shown in Table 1. About half of the respondents were younger than 50, with 35% younger than 35. Arab-Israelis comprised 13% of the sample and the rest were Jewish-Israelis and others. About 60% of the sample was born in Israel and this group constituted 81% of the 21–35 age group; 68%, of the 36–49 age group; 43%, of the 50–65 age group; and 18%, of the oldest age group. About 70% of the sample was married or living with someone, and 19% had never been married. Twenty-two percent of the sample had not completed secondary education while 25% of the sample had a college-level degree. At the time of the survey, 70% of the males and 50% of the females were working.

Psychiatric morbidity

Table 2 shows that almost one in five respondents (17.6%) reported a lifetime occurrence of a mood or anxiety disorder (AMAD), while nearly one in 10 (9.7%) adults reported AMAD in the previous 12 months. This corresponds to a total of about 390,000 individuals in the whole country. Mood disorders were twice as common as anxiety disorders. Lifetime histories of mood and anxiety disorders were found in 10.7% and 5.2%, respectively. For the 12 months prior to the interview, the corresponding figures were 6.4% and 3.2%.

Major depression was the most prevalent disorder, a 9.8% lifetime prevalence rate; next was GAD (2.7%). Only 1.5% of the population crossed the threshold for PTSD in their lifetime and only 0.5% experienced it in the year prior to the survey.

Among the respondents with a disorder in the last 12 months, 37.5% had a clinically severe condition; 34.3%, moderate; and 28.1%, mild. The distribution within each disorder showed that in 5 of the 7 studied diagnoses, about 50% or more of the cases were classified as severe. A Bipolar diagnosis, by definition, was rated severe (see Methods section). Next in degree of severity was the PTSD diagnosis, with 70% of diagnosed respondents meeting the criteria for severe disorder; followed by dysthymia (53.7%); panic (52.8%); and agoraphobia without panic (49.7%). Respondents with major depression were almost equally divided between severe (41.1%) and moderate (43.1%) levels of the disorder, the remainder being mild. For GAD, 32.7% of the cases were severe; about 40%, moderate; and about one-quarter, mild.

Table 2. *Lifetime and twelve-month prevalence rates by severity of DSM-IV/WMH-CIDI disorders*

Disorders	Lifetime prevalence			12 month								
				Prevalence			Distribution by severity level					
							Mild		Moderate		Severe	
	N	%	SE	N	%	SE	%	SE	%	SE	%	SE
Dysthymia	46	0.9	0.1	30	0.6	0.1	12.6	6.4	33.7	8.8	53.7	9.5
Major depressive disorder	484	9.8	0.5	280	5.9	0.4	15.8	2.2	43.1	3.1	41.1	3.1
Bipolar Disorder	32	0.7	0.1	22	0.5	0.1	0.0	0.0	0.0	0.0	100.0	0.0
Any mood disorder	524	10.7	0.5	303	6.4	0.4	14.5	2.1	39.4	3.0	46.1	3.1
Panic disorder	46	0.9	0.1	30	0.6	0.1	24.6	7.9	22.6	8.4	52.8	9.4
Generalized anxiety disorder	136	2.7	0.2	86	1.8	0.2	26.0	4.8	41.3	5.4	32.7	5.2
Agoraphobia without panic	27	0.6	0.1	17	0.4	0.1	15.0	8.8	35.3	11.9	49.7	12.6
Post-traumatic stress disorder	67	1.5	0.2	23	0.5	0.1	14.7	7.1	15.3	7.2	70.1	9.3
Any anxiety disorder	252	5.2	0.3	152	3.2	0.3	23.3	3.5	33.2	3.9	43.6	4.1
AMAD*	860	17.6	0.6	464	9.7	0.4	28.1	2.1	34.3	2.3	37.5	2.4

Percentages in the three severity columns are percentages of all cases and sum to 100% across each row.

* Includes also substance abuse disorders not shown here.

Table 3. *Lifetime and twelve-month prevalence rates by degree of comorbidity and severity of DSM-IV/WMH-CIDI disorders*

Disorder	Lifetime prevalence			12 month								
				Prevalence			Distribution by severity level					
							Mild		Moderate		Severe	
	N	%	SE	N	%	SE	%	SE	%	SE	%	SE
AMAD*	860	17.6	0.6	464	9.7	0.4	28.1	2.1	34.3	2.3	37.5	2.4
1 Disorder	624	17.6	0.6	382	7.9	0.4	32.8	2.4	34.8	2.5	32.4	2.6
2 Disorders	236	4.8	0.3	65	1.4	0.2	8.9	3.7	36.2	6.3	54.8	6.5
3+ Disorders	53	1.0	0.1	17	0.4	0.1	0.0	0.0	16.3	8.8	83.7	8.8

Percentages in the three severity columns are percentages of all cases and sum to 100% across each row.
* Includes substance abuse disorders not shown here.

Table 4. *Age of onset of WMH-CIDI disorders in selected percentiles of the sample, and projected lifetime risk at age 75**

Disorders	Percentiles								Projected Lifetime Risk at Age 75*	
	5	10	25	50	75	90	95	99	%	SE
Panic disorder	13	19	32	51	61	73	73	73	2.0	0.4
GAD	19	23	33	47	58	66	69	73	5.8	0.7
PTSD	13	15	23	37	46	64	66	66	2.5	0.4
Any anxiety	13	18	27	43	59	66	71	73	10.1	0.9
Major depression	15	18	25	41	61	70	73	73	19.6	1.5
Dysthymia	10	16	23	38	53	73	73	73	1.9	0.7
Bipolar I and II	6	13	21	31	48	66	66	66	1.2	0.3
Any mood disorder	14	18	24	41	61	70	73	73	21.2	1.6
AMAD	14	18	22	35	53	66	71	73	29.7	1.5

* When the present population reaches age 75

Severity level was correlated with comorbidity. More than 70% of those with AMAD (see Table 3) in their lifetime (624/860) and more than 80% with AMAD in the past 12 months (382/ 464) had only one diagnosis and, of these, 32% of the disorders were classified as severe. However, of the 14% of the sample who had two disorders, 54.8% were classified severe, and of respondents with three diagnoses or more (3.6%), about 84% were classified severe.

Age of onset

The distributions of cumulative lifetime risk estimates were standardized and examined for fixed percentiles. Table 4 shows that one-quarter of respondents with AMAD had their first disorder episode before age 25. The median age of onset was 35 and by the age of 53, 75% of those with AMAD had already had their first episode of disorder. For 90% of the individuals with AMAD, their first experience of disorder occurred before age 66.

The disorders with the highest proportion of severe cases (Table 2), namely PTSD and Bipolar disorder, were among those with the earliest average age of onset. By the age of 46 to 48, the disorder had already manifested itself in 75% of all lifetime cases of Bipolar disorder or PTSD. Between the 25th and 75th percentiles of the age-of-onset distributions the difference in age-of-onset was highest for major depression (36 years) and lowest for PTSD or GAD (23–25).

Table 5. *Socio-demographic predictors of 12 month DSM-IV psychiatric disorders and severity*

	All Disorders		Any Mood Disorder		Any Anxiety Disorder		Severity	
Variables	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender								
Males	1	.	1	.	1	.	1	.
Females	1.15	0.94–1.42	1.47	1.15–1.91	1.29	0.91–1.85	1.95	1.26–3.01
Sig.	0.18		0.002		0.152		0.003	
Age								
21–34	1.5	1–2.27	1.47	0.88–2.43	0.9	0.46–1.74	0.74	0.34–1.59
35–49	1.41	0.97–2.07	1.45	0.92–2.29	0.97	0.52–1.81	0.79	0.3–1.68
50–64	1.55	1.07–2.26	1.34	0.85–2.12	1.61	0.92–2.82	0.97	0.44–2.12
65 +	1		1		1		1	
Sig.	0.13		0.416		0.077		0.822	
Income								
Low	1.24	0.89–1.75	1.12	0.75–1.69	2.22	1.21–4.07	2.3	1.07–4.95
Low-average	0.96	0.71–1.31	0.88	0.61–1.27	1.42	0.79–2.54	1.23	0.63–2.38
High-average	1.01	0.76–1.36	0.89	0.62–1.26	1.52	0.86–2.67	0.87	0.45–1.65
High	1		1		1		1	
Sig.	0.37		0.501		0.05		0.03	
Family Status								
Married/cohabiting	1		1		1		1	
Sep./widowed/divorced	2.05	1.52–2.77	2.2	1.55–3.13	1.54	0.92–2.54	1.78	0.93–3.4
Never married	1.5	1.12–2.02	1.37	0.96–1.97	1.3	0.73–2.31	0.62	0.35–1.11
Sig.	0		0		0.19		0.027	
Education								
Low	1.61	1.18–2.21	1.59	1.08–2.34	1.69	1.02–2.78	0.89	0.44–1.77
Low-average	1.38	1.05–1.84	1.37	0.97–1.93	1.09	0.67–1.78	1.04	0.59–1.84
High-average	0.98	0.69–1.4	1.05	0.68–1.61	0.54	0.27–1.07	0.77	0.36–1.66
High	1		1		1		1	
Sig.	0		0.06		0.004		0.83	

Projected morbid lifetime risk

The lifetime risk estimates provide an indication of the proportion of the population expected to develop the studied disorders over the average life expectancy of the population which is expected to be 75 years of age. The last two columns of Table 4 show the projected lifetime risk as of age 75 for the various disorders. Compared to the lifetime prevalence rates presented in Table 2, the projected lifetime risk is almost 100% higher for all disorders (29.7% v. 17.6%).

Socio-demographic correlates

Table 5 shows the socio-demographic correlates of AMAD. Women were only slightly more likely to have had a mood disorder in the past 12 months, but were significantly more likely to have a more severe case of the disorder. Age did not predict either a disorder or the level of its severity.

Income (expressed in quartiles of the per capita income distribution) was unrelated to a higher probability of AMAD, but was significantly related to the level of severity. That is, respondents in the lowest

quartile had a higher probability of suffering from a severe form or a disorder.

Marital status was highly correlated with all disorders, particularly mood disorders, and also to their severity. The separated, divorced or widowed were twice as likely to have a disorder, and 70% more likely to have severe cases than the married.

The less educated had significantly higher odds for having AMAD, particularly anxiety disorders, but did not differ from the other respondents in the likelihood of having a severe form of a disorder.

Discussion

Our study has both limitations and strengths that should be considered when evaluating its results.

First, the Israeli version of the WMH-CIDI was used in this survey for the first time. For anonymity and financial reasons, CIDI-based diagnoses were not checked against those based on instruments administered by clinicians. We therefore relied on the generally satisfactory results obtained in validity studies in Europe (16) and on an American reappraisal study, which compared the WMH-CIDI to the Structured Clinical Interview for DSM-IV (SCID) for lifetime disorders and for 12-month estimates (17).

Second, our survey focused only on the common mental health disorders and did not cover the full spectrum of mental disorders, or sub-threshold cases. In addition, it did not include institutionalized individuals, such as prisons or mental hospitals. Therefore, the prevalence rates from this survey will underestimate the mental health burden in Israel.

With respect to the study's strengths: First, the response rate was relatively high (18). Second, the interviews were carried out in Arabic, Hebrew or Russian, enabling the vast majority of the Israeli public both to hear and respond to the questions in their mother tongue. Third, the interviews were carried out via computer-aided programs, increasing the data quality by drastically reducing between-interviewer variation. Finally, the National Health Survey was carried out as part of the WHO/WMH survey, which allowed comparison between Israel and developed and less developed countries (see below).

The Israel National Health Survey showed that mood and anxiety disorders are common. Almost one in five respondents reported a lifetime occurrence of a mood or anxiety disorder, while nearly one in 10 adults had a mood or anxiety disorder in the preceding 12-month period.

Mood disorders were twice as common as anxiety disorders. Note, however, that the exclusion of specific phobias and social phobia from the survey could have accounted for this result.

About 40% of the DSM-IV diagnosed cases were classified as severe. The onset of the commonest conditions occurs at an early age, 25% of the lifetime cases began before age 25 and 75% before age 53.

As mentioned above, the Israel National Health Survey was part of the WMH Survey and thus enables comparisons with results obtained in other participating countries: the European Study of the Epidemiology of Mental Disorders (ESEMed) group in six European countries (Belgium, France, Germany, Italy, The Netherlands, Spain) (19), the Ukraine (20), Lebanon (21) and the U.S.A. (22). However, the contrasting socio-demographic composition of those countries and possible differences in the expression of mental health problems (23, 24) do limit these comparisons. Yet, the comparison serves as a general reference to the general societal burden of mental health disorders.

Overall, the results from our survey fall in the range shown for the ESEMed group, but diverge from those that were obtained in the U.S.A. and the Ukraine. According to the ESEMed group, one in four adults is affected by common mental disorders during his/her lifetime, and one in 10 during the preceding year. Note that the ESEMed group included specific phobias and social phobia in their estimates. For the Ukraine, the corresponding figures are one in three and one in five and, for the U.S.A., one in two and one in four.

The 12-month prevalence of mood disorders, which was 6.4% in Israel, was for the ESEMeD group, 6.2%; in Belgium, 8.5%; in France, 3.6%; in Germany, 3.8%; in Italy, 6.9%; in The Netherlands and Spain, 4.9%. In the U.S.A., the 12-month prevalence of all mood disorders was 9.5%; in the Ukraine, 8.9%; and in Lebanon, 6.6%. The estimated rate for DSM-IV major depression in Israel was 5.9%, compared with 3.9% for the ESEMeD group; 6.7%, for the U.S.A.; 8.4%, for the Ukraine; and 4.9%, for Lebanon.

Anxiety disorders were less prevalent than mood

disorders: the highest 12-month prevalence among this group of disorders was DSM-IV general anxiety disorder, which in Israel was 1.8%, compared with 1.0%, for the ESEMeD group, 3.1%, for the U.S.A., 1.2%, for the Ukraine, and 1.3%, for Lebanon.

Applying the WMH Survey criterion of severity, our results showed that of the respondents with any mood diagnosis, 45% had a severe disorder and 14% had a mild one. The results in the U.S.A. and Lebanon were similar. However, with regard to anxiety disorders, in Israel 43% were severe and 23% mild, whereas in the U.S.A. and in Lebanon, only 19.7% — 22% were classified as severe and 43% as mild.

In Israel, fewer than 20% of those with a mood or anxiety disorder in the past 12 months had more than one diagnosis. The same pattern was found in the Ukraine, where less than 30% of men or women had more than one diagnosis. In the ESEMeD group, the parallel co-morbidity rates were 41.7% for those with any mood disorder and 28.3% for those with any anxiety disorder. In the U.S.A., where a large number of diagnoses were checked, more than 40% of respondents with any disorder had more than one.

The age-of-onset distribution for diagnoses that were checked in both the U.S.A. and in Israel showed that in Israel the median age was 10 years later than in the U.S.A. (25) and the Ukraine (20). As a result, the projected lifetime risk in Israel was almost 100% higher than the lifetime prevalence for all disorders, unlike the U.S.A., where the projected lifetime risk was only 4.4% higher. This result expresses the fact that the median onset age for most disorders in Israel falls in the 35–45 age group and that a large part of the sample had not yet reached the age to develop the disorders.

The socio-demographic correlates of the occurrence of mood or anxiety disorder in the last 12 months in our sample did not replicate the patterns of other large-scale cross-sectional surveys of common mental disorders conducted in other countries (26). Being female (27, 28), middle-aged (29) or with low income level (30, 31) did not correlate with higher odds of having a mood or anxiety disorder, but among those who did suffer a disorder these variables did correlate with higher odds of having a more severe disorder. Being separated, divorced or widowed was highly associated with higher odds of having a disorder, particularly a mood disorder, and also with the severity of the disorder. A lower level of education was related to higher odds of having a disorder, but not to severity.

With regard to the socio-demographic risk factors in our sample, the results reflect, possibly, an interaction between the socio-demographic variables and the three main population groups: old-stock Jewish-Israelis, Arab-Israelis, and immigrants from the former U.S.S.R. For this reason, the question whether the main socio-demographic risk factors for higher rates of common mental health disorders in Israel differ from other countries will have to await a more detailed comparison between the three above-mentioned population groups.

In conclusion, contrary to expectations originating in Israeli society's unique circumstances, the prevalence of mood and anxiety disorders in Israel falls within the range found in western countries. However, given the age structure of Israel and the age of onset of most disorders, the total burden of mental disorders in Israel in the near future is likely to increase.

Acknowledgements

The national health survey was funded by the Ministry of Health. The Israel National Institute for Health Policy and Health Services Research and the National Insurance Institute of Israel provided additional support.

Collaborating investigators include Daphna Levinson (Principal Investigator, Ministry of Health, Mental Health Services); Itzhak Levav (Co-Principal Investigator, Ministry of Health); Alexander Grinshpoon (Tirat Hacarmel Hospital); Ziona Haklai (Ministry of Health); Anat Shemesh (Ministry of Health); Gabi Bin Nun (Ministry of Health); Alexander Ponizovsky (Ministry of Health); Yaacov Lerner (Falk Institute); Nelly Zilber (Falk Institute & French Research Center of Jerusalem); Anneke Ifrah (ICDC); Yehuda Neumark (Hebrew University-Hadassah, School of Public Health); Julia Mirsky (Ben-Gurion University); Alean Al-Krenawi (Ben-Gurion University), Haim Knobler (The Hebrew University & Ben-Gurion University); and Robert Kohn (Brown University, U.S.A.).

The survey was carried out by the Israel Central Bureau of Statistics. We thank Ari Paltiel, Naama

Rotem, Michal Nir, Yoel Domb, Tzufit Bartov, Rinat Rivlis Tzachi Makovki and their able staff for the field work. Nabil Geraisy and Razek Khwaled translated the questionnaires into Arabic, and Alexander Ponizovsky and Julia Mirsky into Russian. Boaz Lev provided encouragement and practical support.

The views and opinions expressed in this article are those of the authors and should not be construed to represent the views of the Government or of any of the sponsoring organizations.

This survey is carried out in conjunction with the World Health Organization/World Mental Health (WMH) Survey Initiative. We thank the staff of the WMH Data Collection and Data Analysis Coordination Centers for assistance with instrumentation, fieldwork, and consultation on data analysis. These activities were supported by the National Institute of Mental Health (R01 MH070884), the John D. and Catherine T. MacArthur Foundation, the Pfizer Foundation, the U.S. Public Health Service (R13-MH066849, R01-MH069864, and R01 DA016558), the Fogarty International Center (FIRCA R03-TW006481), the Pan American Health Organization, Eli Lilly and Co., Ortho-McNeil Pharmaceutical, Inc., GlaxoSmithKline, and Bristol-Myers Squibb. A complete list of WMH publications can be found at http://www.hcp.med.harvard.edu/wmh/.

References

1. Lerner Y. Psychiatric epidemiology in Israel. Isr J Psychiatry Relat Sci 1992;29:218–228.
2. Aviram U, Zilber N, Lerner Y, Popper M. Chronically mentally ill persons in Israel: Estimations of their number and characteristics. Social Security 1998;53:92–105.
3. Levav I., Kohn R., Dorenwend BP, Shrout RE, Skodol AE, Schwartz S, Wenk EG, Naveh G. An epidemiological study of mental disorders in the ten-year cohort of young adults in Israel. Psychol Med 1993;23:691–707.
4. Wittchen HU, Jacobi F. Size and burden of mental disorders in Europe: A critical review and appraisal of 27 studies. Eur Neuropsychopharmacol 2005;15:357–376.
5. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen HU, Kendler KS. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. Arch Gen Psychiatry 1994;51:8–19.
6. Somer E, Bleich A, editors. Mental health in terror's shadow: The Israeli experience. Tel Aviv: Ramot, University of Tel Aviv, 2005.
7. Lerner Y, Kertes J, Zilber N. Immigrants from the former Soviet Union, 5 years post-immigration to Israel: Adaptation and risk factors for psychological distress. Psychol Med 2005;35:1805–1814.
8. Levav I. Individuals under conditions of maximum adversity. In: Dohrenwend BP, editor. Adversity, stress and psychopathology. New York: Oxford University, 1998: pp. 13–33.
9. World Health Organization. The World Health Report 2001 — Mental Health New Understanding, New Hope. World Health Organization, 2001.
10. DanieliY, Brom D, Sills J, editors. The trauma of terrorism: Sharing knowledge and shared care. An international handbook. New York: The Haworth Maltreatment & Trauma Press, 2005.
11. Kessler RC, Ustun TB. The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). Int J Methods Psychiatr Res 2004;13:93–121.
12. Sheehan D. The anxiety disease. New York: Bantam Books, 1983.
13. Kaplan EL, Meier P. Nonparametric estimation from incomplete observations. J Am Stat Assoc 1958;53: 457–481.
14. Hosmer DW, Lemeshow S. Applied logistic regression. New York: Wiley, 1989.
15. Research Triangle Institute SUDAAN Version 8.0.2. Research Triangle Park,: Research Triangle Institute, 2003.
16. Wittchen HU. Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): A critical review. J Psychiatr Res 1994;28:57–84.
17. Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, Rush AJ, Walters EE, Wang PS. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). JAMA 2003;289:3095–3105.
18. The WHO World Mental Health Survey Consortium. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health surveys. JAMA 2004;291:2581–2590.
19. The ESEMeD/MHEDEA 2000 Investigators. Prevalence of mental disorders in Europe: Results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. Acta Psychiatr Scand 2004; 109:21–27.

20. Bromet EJ, Gluzman SF, Paniotto VI, Webb CP, Tintle NL, Zakhozha V, Havenaar JM, Gutkovich Z, Kostyuchenko S, Schwartz JE. Epidemiology of psychiatric and alcohol disorders in Ukraine: Findings from the Ukraine World Mental Health survey. Soc Psychiatry Psychiatr Epidemiol 2005;40:681–690.
21. Karam EG, Mneimneh ZN, Karam AN, Fayyad JA, Nasser SC, Chatterji S, Kessler RC. Prevalence and treatment of mental disorders in Lebanon: A national epidemiological survey. Lancet 2006;367:9515.
22. Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 2005;62:617–627.
23. Piccinelli M, Rucci P, Ustun B, Simon G. Typologies of anxiety, depression and somatization symptoms among primary care attenders with no formal mental disorder. Psychol Med 1999;29:677–688.
24. Patel V. Cultural factors and international epidemiology. Br Med Bull 2001;57:33–45.
25. Kessler, Berglund P, Demler O, Jin R, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 2005;62:593–602.
26. Fryers T, Melzer D, Jenkins R. Social inequalities and the common mental disorders: A systematic review of the evidence. Soc Psychiatry Psychiatr Epidemiol 2003; 38:229–237.
27. Gold JH. Gender differences in psychiatric illness and treatments: A critical review. J Nerv Ment Dis 1998; 186:769–775.
28. Patel V, Araya R, de Lima M, Ludermir A, Todd C. Women, poverty and common mental disorders in four restructuring societies. Soc Sci Med 1999;49: 1461–1471.
29. Paykel ES, Brughab T, Fryers T. Size and burden of depressive disorders in Europe. Eur Neuropsychopharmacol 2005;411–423.
30. Kohn R, Dohrenwend BP, Mirotznik J. Epidemiological findings on selected psychiatric disorders in the general population. In: Dohrenwend BP, editor. Adversity, stress, and psychopathology. Oxford: Oxford University, 1998.
31. Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen HU, Kendler KS. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. Arch Gen Psychiatry 1994;51:8–19.