

Suicidal behavior among immigrants

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ABSTRACT

Introduction: This paper explores the association between suicidal behavior and immigrant status among Israeli residents from the former USSR (FSU).

Method: The Israeli component of the World Mental Health Survey (INHS) provided information on suicide ideations, plans and attempts. The INHS samples included Israel-born Jews (n = 2114) and post-1990 immigrants from the FSU (n = 814). Data on completed suicide were extracted from the

countrywide report of the Ministry of Health. *Results:* The controlled lifetime rates of suicidal behavior among FSU immigrants were significantly higher than among their Israel-born counterparts. A higher risk was found in the first years following immigration among young adults with higher education and without a spouse. Completed suicide rates were higher among the FSU immigrants than in the general Israeli population with the largest risk among young-adult immigrant men. *Discussion:* The findings are consistent with previous studies and are discussed in the context of both suicide rates in the country of origin and migratory stressors. Preventive measures are suggested.

Key words: Suicidal behavior, immigrants, former Soviet Union, Israel

SUMMATIONS:

- The controlled lifetime prevalence rates of suicide behavior were significantly higher among FSU immigrants than among their Israel-born counterparts.
- A higher risk for suicidal behavior was found in the first years following immigration among young adults with higher education and without a spouse.
- FSU immigrants were overrepresented among completed suicides in Israel. Young immigrant men had twice the risk for completed suicide than young males in the general population.
- While the rates of suicide in FSU are very high, the role of migratory stresses among FSU immigrants cannot be ruled out.

CONSIDERATIONS:

The present study is limited to one group of immigrants. Further studies with other groups are needed to establish the effects of suicide rates in the countries of origin and of migratory stresses on suicidal behavior.

INTRODUCTION

Suicidal behavior is a complex phenomenon resulting from multiple factors, including biological, clinical, psychological and social (1, 2). Specific (e.g., affective and anxiety disorders) and non-specific psychopathology (e.g., emotional distress) were found to be associated with suicidal behavior (1, 3, 4). Other studies have found that suicide ideation is a risk factor for suicide attempts (5, 6), and that social cohesion and support may ameliorate the impact of stressful life events (1,7). Immigration, a major stressful life event, could disrupt the individual's social supports, enhance the risk for anxiety and/or depressive disorders (8), and ultimately lead to suicidal behavior.

Suicidal behavior and immigration

Most studies of immigrants' mental health worldwide have shown that the rates of psychological distress, mental disorders and suicidal behavior are higher among immigrants, particularly if the rate of suicide in the country of origin is high relative to the host society (8-12). In addition, unemployment, unmarried status, low social integration and xenophobia were identified as risk factors for poorer mental health and suicidality among immigrants (13-16).

Suicide in the USSR and in the Former Soviet Union

The possibility to compare suicide rates in the Former Soviet Union (FSU) to rates in other countries is a recent subject of inquiry, as during the Soviet era epidemiological data were not published. Only in 1989, when President

Gorbachev released classified files, apparently reliable data that had been collected since 1980 were made public (17). In the years 1984-1990, the rate of suicide in the Baltic republics was 28.0 per 100,000; in the Slavic republics, 25.6 per 100,000; in Moldova, 18.1 per 100,000; and in the Caucasus, 3.5 per 100,000. The rate of suicide was higher among men and climbed with age, with approximately 50% of suicides among men and 27% among women being associated with alcohol consumption. Towards the mid-1990's with *perestroika* that brought both hope to the people and the "prohibition" law for alcoholic drinks, the rate of suicide in the USSR dropped by 32% and 19% among men and women, respectively (17).

During the late 1990's, when the FSU faced a severe economic crisis, the death rates, including suicide rates, increased. Suicide became the most common cause of death among men aged 15-34 and a leading cause among men aged 35-69. In the years 1998-2001, the life expectancy of Russian men was 58.9 years, while that of Russian women was 71.8 years (18). The effect of alcohol consumption was substantial (19) and the highest suicide rates were found in the former Baltic republics (20). Recently reported suicide rates in the Russian Federation are among the highest in Europe: 58.1 per 100,000 for men (ranked the highest among 24 countries) and 9.8 per 100,000 for women (21).

As a result, FSU immigrants in Israel may be prone toward suicide behaviors as they come from a society with relatively high suicide rates. This, in combination with the stresses of immigration, could place the immigrants at a particularly high risk.

Suicidal behavior among FSU immigrants in Israel

In contrast to the high suicide rates in the FSU and the Russian Federation, rates of suicide in Israel are relatively low, 10.4 per 100,000 (ranked 21st among 24 countries), for men and 2.1 per 100,000 (ranked 19th), for women (21). The question then arises, are the suicide rates of immigrants to Israel from the FSU higher than among a suitable comparison group?

The wave of immigration from the Soviet Union and the FSU to Israel, over 1,000,000 immigrants (22), took place over a 10-year period starting in the early 1990's. Most of the immigrants arrived by the mid-1990's (about 800,000) and were a relatively homogeneous population: primarily Jews, with higher education, professionals, from the upper SES in their country of origin, and who chose to settle in Israel rather than elsewhere. This was a selected population, not representative of the general FSU population. Since the mid-1990's, the profile of the FSU immigrants became heterogeneous, with higher proportion of non-Jews, more low-educated immigrants, greater number of single-parent families, and a higher rate of individuals who reported distress prior to immigration (23).

A higher level of psychological distress (anxiety, depression and somatization) has been consistently found among FSU immigrants compared to their Israeli counterparts. Those findings were consistent across all age groups: the young (24), adults (8, 25, 26), and the elderly (27). The elevated level of distress was found to persist for at least 4-5 years following immigration (28, 29). Among risk factors for psychological distress typical to FSU immigrants in Israel are a relative high level of alcohol consumption (30, 31) and the loss of

occupational status and/or unemployment (25,32). Studies on immigrants from the FSU in other countries support the Israeli findings with regard to psychological distress and depression (33, 34). Social support has been shown to be a central distress-mitigating factor among FSU immigrants in Israel (24, 32).

A small number of Israel-based studies specifically explored suicidal behavior among FSU immigrants to Israel and found elevated levels of suicide ideation (35-37). However, these studies were based on convenience samples and did not reflect the actual rates in the population.

The aim of this study was to both examine suicidal behavior (ideation, planning, attempts and completed suicide) among FSU immigrants to Israel and identify relevant risk factors.

METHOD

Data Sources

Two sources of data were used. 1) The Israel National Health Survey (INHS) provided information on suicide ideation, plans and attempts. The INHS was designed to estimate the true prevalence rates of common mental disorders and psychological distress in the non-institutionalized adult population in the country. The INHS was conducted jointly with the World Mental Health Survey (WMHS) under the guidance of Harvard University, USA, and the World Health Organization. The INHS followed the procedures established for the

WMHS (38, 39). 2) Information on completed suicides were extracted from the reports of the Ministry of Health on suicide in Israel (40).

Sampling and Procedure in the INHS

The survey sample was extracted from the National Population Register and comprised of non-institutionalized *de jure* residents aged 21 and older. The sample was designed to reflect gender-age-population distribution of selected groups in the general population including Israel-born Jews, FSU immigrants, and immigrants from other countries who came to Israel since 1990. The sample was weighted back to the total population to compensate for unequal selection probabilities resulting from disproportionate stratification, clustering effects and non-response (41).

Face-to-face interviews at the respondents' homes were conducted from May 2003 to April 2004, in Hebrew or Russian. The survey was administered by interviewers from the Central Bureau of Statistics (CBS) using laptop computer-assisted personal interview (CAPI). A letter signed by the Government Statistician explaining the purpose of the survey and the rights of participants was sent to subjects prior to the first contact attempt. Upon making in-person contact with the sampled respondent, the interviewer reiterated the survey aims and obtained verbal informed consent.

On average, the interviews took 60 minutes. The overall response rate was 73% and there were no replacements. Of the total 4859 completed interviews, 844 were with FSU immigrants (who arrived in the country since 1990), and

2114 were with Israel-born Jewish subjects. The Human Subjects Committee of the Ministry of Health approved the study.

Assessment of Psychological Distress and Psychiatric Morbidity in the INHS

The WMHS version of the Composite International Diagnostic Interview (CIDI), a fully structured diagnostic instrument, was used to assess lifetime and recent prevalence of selected psychiatric disorders according to both the ICD-10 and the DSM-IV classification systems (38). Prevalence estimates of mental disorders were determined by whether respondents' past or current symptoms met 12-month and/or lifetime diagnostic criteria for DSM-IV disorders. 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 of the respective diagnostic section of the questionnaire. Organic exclusion criteria were taken into account in determining DSM-IV diagnoses (38).

Assessment of Suicidal Behavior in the INHS

A question asking about suicide ideation was administered to all respondents: "Have you ever seriously thought about committing suicide?." Those who answered positively were subsequently asked about suicide plans and attempts. These questions were: "Have you ever made a plan for committing suicide?"; and "Have you ever attempted suicide?". For each of the suicide

outcomes, information was obtained about the age of first occurrence and about possible occurrence in the last 12 months.

Completed Suicides data from the Ministry of Health

Data on completed suicides were extracted from data published by the Israeli Ministry of Health (40). These data are based on the file of causes of death of the Central Bureau of Statistics and is constantly updated. The causes of death are extracted from a population data-base of death certificates filled up by physicians for the years 1996-2004. In addition, the Central Bureau of Statistics (CBS), the national agency responsible for the coding of the causes of death, receives information from the national police, the Ministry of Health and other sources to enable a better determination of the cause when doubt arises, although some completed suicides may be reported as external causes of undetermined intent. The denominator figures were obtained from updated estimates by the CBS of the Israeli general population and of the total number of FSU immigrants for the respective years (40).

Statistical Analysis in the INHS

The SUDAAN statistical package (41), Taylor series linearization method, was used to estimate the standard errors due to the stratified sample design of the INHS and the need for weighting. The analysis was conducted using procedures without replacement for non-respondents. Lifetime and 12-month prevalence rates for suicidal behavior (ideation, planning and attempts) were

obtained for both FSU immigrants and Israel-born Jews (the latter used as a comparison group; non-Jewish Israelis were excluded from the comparison). Chi-square tests were used to examine differences in selected categorical demographic risk factors. Logistic regression using odds ratio (OR) and the corresponding 95% confidence interval (CI) were used to examine the association between suicidal behavior, as the dependent variables, and immigrant status, as the independent variable, controlling for demographic variables that were potential confounders. All results, unless otherwise stated, are presented as weighted data.

RESULTS

Suicide Ideations, Plans and Attempts in the INHS

Table 1 provides the distribution of the respondents by gender, age, marital status, education, and employment status. The comparison between the immigrant and nonimmigrant respondents showed significant differences across all demographic characteristics. These differences were consistent with census data, with a relatively higher proportion of women, more unmarried persons, older age, and higher educational level in the immigrant as compared to the general Jewish Israeli population (22). Due to the differences between the samples, results were controlled for relevant demographic variables

Insert Table 1 about here

Table 2 compares the lifetime prevalence rates of suicidal behavior and their corresponding odds ratios between immigrants and Israel-born Jews.

Immigrants were between one and a half and two times as likely as Israel-born to have lifetime suicide ideation, plans or attempts. For example, being an immigrant man increased the odds for planning suicide 1.7 times (95% CI 1.7 -1.8). For an immigrant woman the odds for making a suicide attempt increased nearly two-fold (OR=2.0, (95% CI 1.4 - 2.9)).

Insert Table 2 about here

The onset of most suicidal behavior preceded immigration (Table 3). Yet, for a considerable group of immigrants, 33%, the onset of suicidal behavior, especially ideation, followed immigration. Whenever the onset of suicidal behavior – either prior or following immigration – by 12 months prior to the interview most of the suicide behavior had ceased.

Insert Table 3 about here

Suicide ideation among immigrants was more frequent among: women; ages of 21-34 (both genders); disrupted marital status; mid-low level of education; the unemployed; and a residence of less than 11 years in Israel. Age at immigration was not predictive of suicide ideation when other socio-demographic variables were included in the model. A similar finding was noted for suicide plans and attempts, except that those at highest risk had resided for less than 6 years in Israel, and those who had immigrated between the ages of 35-49 were at highest risk. Employment status was not a risk factor for suicide attempts (see Table 4).

Insert Table 4 about here

As seen in Table 5, the rates of suicidal behavior were much higher among individuals diagnosed with any psychiatric disorder, than among individuals without psychopathology. Immigrant status did not render those with a psychiatric disorder to be at a higher risk for suicidal behavior than the Israel-born Jews with a psychiatric diagnosis.

Insert Table 5 about here

Completed Suicide Data from the Ministry of Health

A significant overrepresentation of immigrants among completed suicides was noted. In recent years, immigrants from the FSU constitute 17% of the population (22) but contribute up to 26% of completed suicides (Table 6). The rates for completed suicide indicate that being an FSU immigrant man increased the risk for suicide almost two-fold (Table 7). For example, in 2000, the age-adjusted rates of completed suicides among FSU immigrant men were 25.2 per 100,000 while among other Israeli men, 13.3 per 100,000; in 2003, the respective rates were 21.5 per 100,000 and 12.9 per 100,000; and in 2005, 20.5 per 100,000 and 10.7 per 100,000, respectively. Among women, there were no notable differences in the rates of completed suicide between FSU immigrant and other Israeli women (Table 7).

Insert Tables 6, 7 and 8 about here

The widest gaps in the rate of completed suicides were between FSU immigrant men and other Israeli men, in particular in their late teens and

young adulthood (Table 8). In the age group of 15-24, the suicide rate among immigrant men was 24.4 per 100,000, in contrast to 9.3 per 100,000 among other Israeli men. The respective rates in the age group of 25-44 were 24.9 per 100,000 and 10.5 per 100,000. In older male age groups this gap narrowed.

DISCUSSION

Both data sources in this study, the community survey (INHS) and the mortality data from the Ministry of Health, consistently indicated relatively elevated rates of suicidal behavior among FSU immigrants in Israel. This is in agreement with most research findings on immigrants, which have shown that the rates of suicidal behavior are higher among them than in the population of their host country (8-12). However, a number of qualifications need to be made.

First, suicide rates among FSU immigrants in Israel, although elevated in comparison to the local population, are far lower than the suicide rates characterizing Russia (21). FSU Jews are not representative of the general population in their countries of origin, and Jewish men in particular have been found in a number of studies to have a large mortality advantage compared with the general Russian population. For example, a study of deaths in Moscow in 1993-1995 found a relatively low concentration of external and behaviorally induced causes of death among Jews (42). Relatively low level of alcohol consumption among Jews in FSU may also account for this

advantage: the lowest rate of alcohol-related mortality was reported recently in the “Jewish Autonomic Region of Birobidjan” (populated mainly by Jews): 3.3 per 100,000 as compared to 40 and even 65 per 100,000 in other regions of the FSU (43). Elevated suicide rates in comparison to the local population, but lower than suicide rates characterizing Russia were also found in a non-Jewish population of Russian immigrants in Germany. In a study of a large cohort of ethnic Germans who immigrated from the FSU to Germany between 1990 and 2001, it was found that immigrant men had 30% higher mortality from suicide than local German men. However, this mortality disadvantage was on a much lower scale than expected if they were representative of their source populations in FSU countries (44). Thus, our findings and the ones cited above suggest that suicide rates in the country of origin alone do not account for suicide rates in immigrant populations and that additional factors may be involved.

We identified a number of risk factors for suicidal behavior that were common to immigrants of both genders: young adult age, disrupted marital status and unemployment. Our findings indicated that most of the suicidal behavior among immigrants began prior to immigration. However, there exists a considerable group of immigrants whose suicidal behavior started following immigration (Table 3), and may be associated with migratory stresses. Young adults are particularly vulnerable to the stresses of migration as they deal with a variety of challenges: the loss of their cultural roots, social contact and professional achievements - which are either irrelevant or unrecognized in their host country; the need to integrate into an unfamiliar society; to learn a new language; to find a job and support their families; their parental roles; and

often caretaking responsibilities towards their aging parents. Disrupted marital status, a universal risk factor for suicide behavior (45), especially for men (46), may become compounded with the stresses of migration.

Regardless of the time of onset - prior or following immigration - suicidal behavior did not persist in the 12 months before the study. It should be noted that at the time when the INHS was conducted, many years had already passed since most of the respondents immigrated. About half immigrated to Israel 11-14 years previously, 32% 6-10 years and only about 21% 1-5 years before they were assessed (Table 1). Therefore, the low rates of self-reported suicidal behavior in the 12 months prior to the study may not be misinterpreted as indicating no risk. The mortality data clearly indicated that the risk for suicide attempts and completed suicides continues to persist in recent years, almost two decades following the major waves of immigration.

Our findings indicate that to reduce the risk for specific and non-specific psychopathology as well as for suicide among FSU immigrants primary and secondary prevention efforts need to be implemented, especially in the first six years after immigration. The relative high risk group of young adults, particularly among men, emphasizes the need for primary prevention targeting the immigrant community as a whole and aimed at minimizing the migratory stresses and maximizing the availability of social supports. Secondary prevention efforts need to comprise early detection of problems among individuals who are especially vulnerable (e.g., those already affected by mental disorders) and that react to the stresses of immigration with elevated psychological distress. In this context, the help-seeking patterns of

FSU immigrants is an important issue to be addressed . Based on their experience with the misuse of psychiatry by the Soviet regime for political purposes, these immigrants' initially rigid and stigmatic attitudes towards the mental health services prevented them from seeking timely treatment (47). However, more recent studies show a growing openness among FSU immigrants to seeking help from mental health professionals (28, 48). Therefore, the promotion of favorable attitudes towards mental health service utilization among these immigrants should continue.

The present study investigated a single group of immigrants in one social context. This limitation implies that further research on other immigrant groups in other countries are needed to differentiate between universal and group-specific and context specific factors.

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Table 1. Demographic characteristics by FSU immigrant and Israel-born Jewish respondent

Sample Characteristics	FSU Immigrants N = 844 %	Israel-born Jews n = 2114 %	Chi-square Test
Gender			211.2
Men	43.7 (384)	49.7 (1081)	(df = 1)
Women	56.3 (460)	50.3 (1033)	P < 0.00001
Age			
21–34	27.6 (209)	47.9 (987)	1418.3
35-49	25.5 (213)	30.7 (891)	(df = 3)
50–64	23.4 (205)	17.4 (550)	P < 0.00001
65+	23.5 (217)	9.2 (321)	
Marital status			
Married	61.2 (512)	64.8 (1333)	1922.0
Was married	24.3 (216)	7.8 (181)	(df = 2)
Never married	14.5 (116)	27.4 (600)	p < 0.00001
Education (quartiles)			
Lowest Quartile	8.5 (76)	12.0 (242)	971.9
Mid Low Quartile	22.3 (179)	46.7 (971)	(df = 3)
Mid High Quartile	26.6 (221)	15.8 (356)	p < 0.00001
Highest Quartile	42.6 (368)	25.5 (563)	
Employment status			
Employed	54.6 (479)	66.8 (1508)	370.8
Unemployed	6.8 (49)	7.9 (148)	(df = 2)
Not in work-force	38.7 (316)	25.3 (458)	p < 0.00001
Age at immigration			
8-20	17.8 (132)		
21-34	25.5 (208)		
35-49	26.1 (222)		
50-64	21.4 (188)		
65+	9.2 (92)		
Years since immigration			
1-5	20.8 (174)		
6-10	32.4 (265)		
11-14	46.8 (404)		

Table 2. Lifetime prevalence rates of suicidal behavior by FSU immigrants and Israel-born Jews (odds ratio and 95% confidence interval)

	FSU Immigrants			Israel-born Jews			Immigrants vs Israel born ^a		
	N	%	SE	N	%	SE	P	OR	95% CI
Total									
Ideation ^b	57	6.8	0.19	106	5.0	0.18	*	1.4	(1.2, 1.6)
Plan ^c	22	2.9	0.16	40	2.0	0.15	*	1.5	(1.3, 1.8)
Attempt ^d	14	1.8	0.09	24	1.2	0.15	*	1.7	(1.3, 2.3)
Men									
Ideation	22	5.6	0.04	50	4.7	0.15	*	1.2	(1.1, 1.3)
Plan	7	2.2	0.02	14	1.4	0.01	*	1.7	(1.7, 1.8)
Attempt	3	0.8	0.01	7	0.7	0.01	*	1.5	(1.5, 1.6)
Women									
Ideation	35	7.8	0.4	56	5.4	0.4	*	1.5	(1.2, 1.9)
Plan	15	3.4	0.3	26	2.6	0.3	*	1.3	(1.0, 1.8)
Attempt	11	2.5	0.16	17	1.8	0.3	*	2.0	(1.4, 2.9)

^a Controlled for: gender, age, education, marital and occupational status

^b n of valid responses on ideation: immigrants = 839; Israel born=2107

^c n of valid responses on plan: immigrants = 804; Israel born=2041

^d m of valid responses on attempt: immigrants = 796; Israel born=2025

* p < 0.0001

Table 3. Number of FSU immigrants with first onset and persistence of suicidal behavior

First onset prior or after immigration	N	Suicidal behavior in past 12 months	
		Yes	No
Ideation			
Prior	27	5	22
After	18	3	15
Plans or attempts			
Prior	12	2	10
After	1	0	1

Table 4. Logistic regression model with all demographic and social risk factors for lifetime prevalent suicidal behavior among FSU immigrants entered (odds ratio and 95% confidence interval)

Variables	Ideation OR (95% CI)	Plan OR (95% CI)	Attempt OR (95% CI)
Gender			
Male	0.8 (0.7, 1.0)	0.7 (0.5, 0.9)	0.4 (0.3, 0.5)
Female	1.0	1.0	1.0
Age			
21–34	1.0	1.0	1.0
35-49	1.1 (1.0, 1.1)	0.5 (0.5, 0.6)	0.7 (0.6, 0.8)
50–64	0.6 (0.5, 0.6)	0.3 (0.3, 0.3)	0.5 (0.4, 0.6)
65+	9183.0 (6415.8, 13143.7)	699.1 (81.1, 6030.1)	-
Marital Status			
Married	1.0	1.0	1.0
Was married	1.9 (1.7, 2.2)	1.7 (1.4, 2.0)	3.1 (2.7, 3.5)
Never married	0.6 (0.4, 0.9)	0.6 (0.3, 0.9)	1.0 (0.5, 2.2)
Education (quartiles)			
Lowest	0.5 (0.5, 0.6)	-	-
Mid-low	1.2 (1.1, 1.4)	1.5 (1.4, 1.6)	1.5 (1.1, 1.9)
Mid-high	0.5 (0.5, 0.5)	0.5 (0.4, 0.5)	0.5 (0.5, 0.6)
Highest	1.0	1.0	1.0
Employment			
Employed	1.0	1.0	1.0
Unemployed	1.3 (1.1, 1.5)	2.1 (1.4, 3.1)	0.9 (0.6, 1.2)
Not in work force	1.4 (1.1, 1.8)	2.7 (0.9, 3.0)	1.1 (0.8, 1.4)
Age at immigration			
8-20	1.0	1.0	1.0
21-34	0.7 (0.5, 0.9)	1.1 (0.9, 1.3)	3.0 (0.7, 12.7)
35-49	1.0 (0.7, 1.5)	2.9 (2.5, 3.3)	7.3 (1.9, 28.0)
50-64	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	-
65+	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	-
Years since immigration			
1-5	2.4 (2.3, 2.6)	2.0 (1.9, 2.1)	3.0 (2.3, 3.7)
6-10	1.3 (1.1, 1.5)	0.7 (0.6, 0.9)	0.6 (0.4, 0.9)
11-14 ^a	1.0	1.0	1.0

^a The longest time in Israel in the sample was 14 years

Table 5. Lifetime suicidal behavior in FSU immigrants and Israel-born Jews among those with any DSM-IV disorder^a (odds ratio and 95% confidence interval)

	FSU Immigrants			Israel-born Jews			Immigrants vs Israel born		
	N	%	SE	N	%	SE	p	OR	95% CI
Ideation	31	17.5	0.35	72	19.8	0.96	NS	0.9	(0.7, 1.1)
Plan	15	9.5	0.42	29	9.1	0.82	NS	1.1	(0.9, 1.4)
Attempt	11	7.2	0.45	17	5.8	0.87	0.002	1.7	(1.2, 2.3)

^a Controlled for: gender, age, education, marital and occupational status

Table 6. The percent of immigrant suicides based on all completed suicides in Israel^a

Year	All Suicides in Israel ^b N	Suicides in FSU Immigrants N	Percent of all Suicides %
1996	306	59	19%
1997	379	59	16%
1998	317	55	17%
1999	368	78	21%
2000	394	89	23%
2001	398	104	26%
2002	380	81	21%
2003	417	88	21%
2004	411	101	25%
2005	412	97	24%
2006	365	77	27%

^a Adapted from Haklay et al, 2009

^b Including non-Jewish Israelis and non-Israel born – FSU immigrants excluded

Table 7. Suicide rates 1997-2004: comparison between FSU immigrants and general Israeli population, age 15+ ^a (age-adjusted rates per 100,000)

Year	Men		Women		
	Israeli population ^b	FSU immigrants	Israeli population ^b	FSU immigrants	
1997		18.8	12.7	3.9	3.7
1998		19.2	13.6	3.8	3.5
1999		21.3	13.1	3.7	3.6
2000		25.2	13.3	3.5	3.4
2001		24.1	13.0	3.4	3.6
2002		22.4	13.2	3.8	3.1
2003		21.5	12.9	4.1	3.3
2004		21.1	12.3	5.2	3.2
2005		20.5	10.7	4.6	3.5

^a Adapted from Haklay et al, 2009

^b Including non-Jewish Israelis and non-Israel born Jews. FSU immigrants excluded

Table 8. Suicide rates 2001-2004 by age group: comparison between FSU immigrants and general Israeli population^a (age-adjusted rates per 100,000)

Age	Men		Women	
	Israeli population ^b	FSU immigrants	Israeli population ^b	FSU immigrants
15-24	9.3	24.4	1.9	2.2
25-44	10.5	24.9	3.0	2.8
45-64	15.5	18.9	3.7	5.5
65+	21.6	21.3	5.6	7.7

^a Adapted from Haklay et al, 2009

^b Including non-Jewish Israelis and non-Israel -born Jews. FSU immigrants excluded