

Prevalence of Mental Disorders and Use of Services in an Immigrant Adolescent Population: Findings from a National Mental Health Survey

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Abstract

Objective: The Israel Survey of Mental Health among Adolescents (ISMEHA), carried out from 2004 through 2005, aimed to ascertain the prevalence of mental disorders, service use and associated risk factors. We aimed to estimate the prevalence of mental disorders and the services provided among immigrant adolescents in comparison with Israel-born peers.

Method: A total of 131 adolescent immigrants and 826 Israel-born adolescents, representative of the 14 to 17 age group, and their mothers were interviewed at home, using the Strengths and Difficulties Questionnaire (SDQ), the Development and Well-Being Assessment (DAWBA) inventory and use of services questions.

Results: Immigrant adolescents and their Israel-born peers were equally likely to have a mental disorder (OR = 0.93; CI 0.45 - 1.92), although the SDQ screening instrument showed that mothers of immigrant adolescents rated their child's difficulties significantly higher and their prosocial behavior significantly lower than parents of their Israel-born peers. Immigrants' mothers were as likely as mothers of Israeli-born to use professional and/or informal services for their child's mental health problems (OR = 0.90; CI 0.52-1.56). Being single or divorced was the only risk factor for services underuse among mothers of immigrant adolescents as compared to mothers of Israel-born peers (OR = 0.24 CI 0.07 - 0.88).

Conclusions: The results suggest that, in general, the mental health of immigrant adolescents is comparable to that of their Israel-born peers but single or divorced mothers of immigrant adolescents underuse services for their children's mental problems. These data will enable policymakers to plan services and prevention programs for the target population.

Keywords: Immigrants; Adolescents; Mental disorders; Services use, Israel

Introduction

Immigration is considered a major stressful life-event that intensifies the risk of emotional distress and mental disorders in vulnerable individuals, and causes maladjustment due to the disruption of the family, friendships and other social support networks [1], exposure to an unfamiliar cultural-physical environment [2], to prejudice and discrimination [3], and diminished socioeconomic status [4]. Migrant children and adolescents may experience additional emotional distress and reduced family support due to intergenerational conflict resulting from asymmetric acculturation within migrant families [5,6]. However, a faster acculturation of children and adolescents, compared to that of their parents, may substantially facilitate and accelerate the former's adaptation to the host culture and, thus, reduce distress and mental health risk [7,8].

Between 1989 and 2004 nearly one million Jews from the former Soviet Union (FSU) arrived in Israel [9] and drastically changed the sociodemographic profile of the Israeli population. The aims of this paper are to estimate the prevalence of mental disorders and the use of

mental health services among immigrant adolescents and to compare these estimates with those of their Israel-born peers in the general population. The data were obtained from the Israeli Survey on Mental Health among Adolescents (ISMEHA) that was conducted between 2004 and 2005 by the Mental Health Services of the Ministry of Health in collaboration with the Ministry of Education, Ziv Hospital in Safed and the Schneider Children's Medical Center of Israel [10,11].

Methods

Sampling and procedure

A detailed description of the ISMEHA's sample, data collection, procedures and instruments has been published elsewhere [11]. Briefly, the sample included 957 adolescents aged between 14 and 17 and their mothers. The sampling frame used was the National Population Register. The file included the names of all residents born between July 2, 1987 and June 30, 1990 (N = 317,604), and information such as gender, date and country of birth, immigration date, address and school in which they were last registered. Only one child from each family was included. There were no replacements. Out of the total sample, 14.8% could not be located, whereas 17% refused to participate. Thus, response rate was 80% in the located sample (N =

1,195) and 68.2% in the total sample. The results were weighted back to the total population to compensate for clustering effects and non-responses.

Mothers and adolescents were interviewed separately, face-to-face, at their homes, by trained lay interviewers. Israeli born youth and their mothers were interviewed either in Hebrew or in Arabic, while among immigrants from the FSU, mothers were interviewed in Russian and the adolescents in Hebrew. Parents provided written informed consent for their own and their child's participation in the study, as approved by the Human Subjects Committee of the Schneider Children's Medical Center. Adolescents were explained the objectives and methods of the survey and their right to abstain from answering the questionnaire or specific questions. Confidentiality was assured.

A total of 957 completed interviews were collected, 826 from Israel-born adolescents and their mothers and 131 from their peers who immigrated to Israel after 1989.

Measures

Screening for emotional and behavioral problems

The Strengths and Difficulties Questionnaire (SDQ) [12], a screening instrument for evaluating social functioning and emotional and behavioral problems in children and adolescents was used. Its 5 scales cover four clinical domains: hyperactivity-inattention, emotional symptoms, peer-relationship and conduct problems, and a pro-social behavior scale. Items are rated on a 3-point scale as 0 (not true), 1 (somewhat true), or 2 (certainly true). The questionnaire is multi-informant, i.e. includes both observer- and self-report version for adolescents aged 11 to 17 years. The psychometric properties of the SDQ tested in different cultural contexts and settings have been found to be satisfactory [13,14]. According to Goodman [15], internal consistency reliability (Cronbach alpha) was reported as 0.73, retest stability after 4-6 months was 0.62, and cross-informant correlation was 0.34. We used the Arabic and Russian versions of the instrument readily available at <http://www.sdqinfo.com/>, while the Hebrew version was developed especially for this study [14].

Diagnosis of mental disorders

The Development and Well-Being Assessment (DAWBA) inventory, a package of questionnaires, interviews and rating techniques generating ICD - 10 and DSM - IV psychiatric diagnoses for children aged 5 to 17, was used [16]. The specific diagnoses are categorized into internalizing and externalizing disorders. The DAWBA is a multi-informant instrument, constructed for its administration in the community. A team of child psychiatrists verified the preliminary computerized diagnoses. The Hebrew translation was performed as described elsewhere [11].

Services use assessment

Questions assessing parental help-seeking practices for their children experiencing emotional and behavioral problems covered actual consultations practices. Parents were presented with a list of professional and informal services providers for emotional or behavioral problems in the past 12 months. The effectiveness of the services received was not assessed.

In addition, standard sociodemographic information on gender, maternal marital status and years of schooling, number of siblings and paternal employment was collected.

Data analysis

All statistical analyses were performed using an SPSS - 14 complex sample analysis module (SPSS Inc, Chicago, IL). Prevalence rates for mental disorders according to the sociodemographic factors are presented as percentages with standard errors. SDQ scores are presented as means. Rao-Scott chi-squares were calculated to correct for complex sample design and weighting. The adjusted F is as variant of the second-order Rao-Scott adjusted chi-square statistics and significance tests are based on the adjusted F and its degrees of freedom. Two-tailed t-tests were used to determine the significance of differences in the SDQ mean scores and standard deviations. Logistic regression coefficients were transformed into odds ratios (OR) with 95% confidence intervals (CI).

Characteristic*	Immigrants (n = 131)		Israel-born (n = 826)		χ ² (d.f.=1)	P
	N	%	N	%		
Gender						
Boys	72	51.5	425	51.1	0.008	0.93
Girls	59	48.5	401	48.9		
Maternal marital status						
Married	101	78.8	712	87.1	5.57	0.019
Divorced/single	28	21.2	94	12.9		
Number of siblings						
0 or1 sibling	72	56.7	102	14.8	85.6	<0.0001
2 +	57	43.3	706	85.2		
Maternal education (yrs)						
0 - 11	20	14.8	279	30	11.8	<0.001
12 +	98	85.2	504	70		
Paternal employment						
Employed	90	77.5	571	76.9	0.018	0.89
Unemployed	25	22.5	189	23.1		

*due to missing socio-demographic data not all variables reach 100% responses

Table1: Sociodemographic characteristics: Immigrant vs. Israel-born respondents

Results

The sample included 51% boys, 77% Jewish and 23% Arab/Druze adolescents. Nearly 14% lived with their single or divorced parent,

usually the mother, and 77% lived in families with three or more children. Approximately 40% of the respondents' mothers had 13 years or more of schooling. Nearly 23% of the fathers were not currently in the workforce. The proportion of immigrants in this population was 19% (N = 131), out of which 69% came from the FSU, 21% from America, Europe or South Africa, 8% from Ethiopia and 1% from Palestine or Lebanon. Fifty-four percent of immigrants arrived in Israel before age 5 years, 32% between ages 6 and 10 and 13% between ages 11 and 15 years (data not on Table).

Table 1 shows that compared to their native-born peers, the immigrant adolescents were more likely to live with a single or divorced mother ($\chi^2 = 5.57$, $df = 1$, $p = 0.02$), have fewer siblings ($\chi^2 = 85.6$, $df = 1$, $p < 0.0001$) and have a higher educated mother ($\chi^2 = 11.8$, $df = 1$, $p < 0.001$). The groups did not significantly differ by gender or paternal employment.

Subscale	Immigrants (n = 124)*	Israel-born respondents (n = 807)	t-value** p
	M ± SD	M ± SD	
Adolescent version			
Total Difficulties	8.7 ± 4.4	9.1 ± 4.7	1.06 NS
Emotional Symptoms	2.3 ± 1.9	2.6 ± 2.1	1.33 NS
Conduct Problems	1.8 ± 1.6	1.8 ± 1.5	0.11 NS
Hyperactivity	3.0 ± 2.2	2.9 ± 2.1	0.44 NS
Peer Problems	1.6 ± 1.4	1.8 ± 1.5	1.98 .048
Prosocial Behavior	8.1 ± 1.5	8.4 ± 1.5	2.04 .042
Mother version			
Total Difficulties	7.9 ± 4.6	6.6 ± 4.7	2.77 .006
Emotional Symptoms	1.6 ± 1.4	1.8 ± 1.8	1.16 NS
Conduct Problems	1.7 ± 1.6	1.4 ± 1.4	2.43 .015
Hyperactivity	2.9 ± 2.3	1.9 ± 2.0	5.15 .0001
Peer Problems	1.7 ± 1.6	1.6 ± 1.4	0.70 NS
Prosocial Behavior	8.4 ± 1.7	8.7 ± 1.6	2.22 .026

*7 immigrants and 19 Israeli-born adolescents did not fill in the SDQ
 **Two-tailed t-tests: NS – non-significant

Table 2: SDQ subscale mean scores ± SD according to maternal report: Immigrant vs. Israel-born respondents

Table 2 compares the SDQ scales' mean scores of the immigrants with their native-born peers according to both self- and parent-report version. The self-report shows significant between-group differences only for the Peer Problems scale ($t = 1.98$, $p = 0.048$), with higher scores for native-born adolescents. As well, the prosocial behavior scores were higher among the Israeli-born adolescents ($t = 2.04$, $p = 0.042$). In contrast, mothers of immigrants attributed to their children significantly higher Total Difficulties scores than mothers of their native-born peers ($t = 2.8$, $p = 0.006$), higher Conduct Problems scores ($t = 2.4$, $p = 0.015$) and Hyperactivity-inattention scores ($t = 5.2$, $p <$

0.0001) but significantly lower scores on the SDQ Prosocial Behavior scale ($t = 2.2$, $p = 0.026$).

Characteristic*	Immigrants (n = 15)		Israel-born (n = 99)		Immigrants vs. Israel-born respondents	
	N	%	N	%	OR	(95% CI)**
Gender						
Boys	5	7.7	44	10.1	0.47	.22 – 2.52
Girls	10	14.9	55	13.7	1.01	.45 – 2.71
Maternal marital status						
Married	11	10.6	74	10.0	1.06	.45 – 2.54
Divorced/single	4	14.0	24	26.3	0.45	.12 – 1.72
Number of siblings						
0 or 1 sibling	11	14.6	16	15.9	0.90	.35 – 2.29
2 +	4	7.0	82	11.4	0.58	.19 – 1.74
Maternal education (yrs)						
0-11	2	8.2	41	14.1	0.54	.11 – 2.72
12+	12	11.5	51	10.6	1.09	.44 – 2.70
Paternal employment						
Employed	11	11.7	62	10.7	1.11	.49 – 2.52
Unemployed	3	12.6	26	13.4	0.93	.26 – 3.40

*due to missing socio-demographic data not all variables reach 100% responses
 **Odds ratios with 95% confidence intervals for Immigrants vs. Israel-born respondents; Israel-born respondents is reference group.

Table 3: Socio-demographic characteristics of adolescents with any mental disorder (raw numbers and weighted proportions): Immigrants vs. Israel-born respondents

Socio-demographic characteristics of adolescents with any mental disorder (raw numbers and weighted proportions): Comparing Immigrants vs. Israel-born respondents

Table 3 compares immigrant and Israeli-born adolescents with any mental disorder by selected sociodemographic variables. In the total population, the rates of any mental disorder were very similar: 11.2% among immigrants and 11.9% among their native-born peers [OR = 0.95; CI 0.45 - 1.92]. There were no significant differences in prevalence rates by any of the sociodemographic variables studied. Age at immigration is an important factor for acculturation and, therefore, the relationship between prevalence of any mental disorder and age at immigration, was examined. There was a trend showing an increase of prevalence rates with increasing age at immigration from 9% for those who immigrated between ages 0.5 and 5 years to 13% for those who immigrated between ages 6 - 10, to 18% for those who immigrated between ages 11 and 14 years. However, this trend was not statistically significant ($\chi^2 = 1.19$, $df = 2$, $p = 0.54$), possibly, due to the small

numbers of adolescents included in the analysis (N = 15) (data not shown).

Characteristic*	Immigrants (n = 17)		Israel-born (n = 80)		Immigrants vs. Israel-born respondents	
	N	%	N	%	OR	(95% CI)**
Gender						
Boys	11	16.1	37	10.2	1.69	0.76 – 3.77
Girls	6	7.5	43	11.7	0.61	0.22 – 1.71
Maternal marital status						
Married	14	13.0	56	8.5	1.61	0.86 – 3.01
Divorced/single	3	8.4	24	27.4	0.24	0.07 – 0.88
Number of siblings						
0 or1 sibling	9	11.9	20	20.2	0.53	0.23 – 1.21
2 +	8	12.2	60	9.3	1.36	0.60 – 3.07
Maternal education (yrs)						
0-11	3	13.4	19	8.0	1.79	0.42 – 7.54
12+	14	13.0	55	11.8	1.12	0.61 – 2/05
Paternal employment						
Employed	14	14.7	62	11.8	1.29	0.67 – 2.46
Unemployed	2	6.2	13	7.7	0.80	0.19 – 3.37

*due to missing socio-demographic data not all variables reach 100% responses
 **Odds ratios with 95% confidence intervals for Immigrants vs. Israel-born respondents; Israel-born respondents is reference group.

Table 4: Socio-demographic characteristics of adolescents with any mental disorder whose mothers consulted a mental health professional: Immigrants vs. Israel-born respondents

Overall, there were no significant differences in service use between mothers of immigrant adolescents and their Israeli peers (12% vs. 11%) [OR = 0.90; CI 0.52 - 1.56] (data not on Table). Table 4 compares immigrant and Israeli-born adolescents diagnosed with any mental disorder, whose mothers consulted a mental health professional, by selected socio-demographic characteristics. Marital status was found to be the only variable associated with significant between-group difference in service use among mothers of an adolescent with a mental disorder; single or divorced mothers of immigrant adolescents were 4-fold less likely than their Israeli counterparts to use services (OR = 0.24, CI 0.07 - 0.88).

Risk factors	Any mental disorder	Services use
	OR (95% CI)	OR (95% CI)
Immigrant		
Yes	0.75 (0.33 – 1.72)	0.99 (0.49 – 2.02)
No	1.00 [Reference]	1.00 [Reference]
Marital status of parents		
Married	1.00 [Reference]	1.00 [Reference]

Single/divorced	2.25 (1.30 – 3.90)**	1.99 (1.04 – 3.80)**
Number of siblings		
0 or 1	1.49 (.82 – 2.73)	1.49 (.71 – 3.01)
2+	1.00 [Reference]	1.00 [Reference]
Maternal education (yrs)		
0-11	1.35 (.76 – 2.41)	0.61 (.35 – 1.05)
12+	1.00 [Reference]	1.00 [Reference]
Any mental disorder		
Present	--	8.73 (4.92 - 15.50)***
Absent	--	1.00 [Reference]

*- p < 0.05; **- p < 0.01; *** - p < 0.001

Table 5: Risk factors for any mental disorder among adolescents and for services use: Summary of logistic regression analyses (odds ratios and 95% confidence intervals)

Table 5 shows results of the two regression analyses, separately conducted to predict rates of any mental disorder and of service use (the dependent variables) from a set of independent variables including immigrant status, maternal marital status, maternal education and number of siblings. The presence of a mental disorder was included in the logistic regression model when assessing use of services.

Regarding mental disorders, the analyses showed that the marital status of the mother was a significant risk factor for any mental disorder in the adolescent: children of divorced or single mothers were 2.25 times more likely than those of married mothers to have a mental disorder. Regarding use of services, children of a divorced or single mother were twice as likely as those of married mothers to seek help, even when adjusting for mental disorder and immigrant status. Table 5 also shows that, as expected, mothers of adolescents with a mental disorder were nearly 9 times more likely than those whose child had no disorder to use services (OR = 8.73; CI 4.92 – 15.50).

Discussion

One of our main findings was that, unlike results in other countries with immigrant populations [17,18], immigrant adolescents were as likely as their Israel-born peers to have a mental disorder. The ISMEHA found that approximately one in every eight Israeli adolescents (11.7%) had a diagnosed mental disorder at a given time [10].

These findings challenge two contrasting common explanations for differences between the immigrants' mental health and that of their host country peers: the acculturation-stress hypothesis [19] that holds that migration is associated with higher psychological distress scores and rates of mental disorders among immigrants, compared to host country nationals, and the selection or healthy-immigrants hypothesis [20] that proposes that immigrants have lower psychological distress scores and rates of mental disorders since healthier individuals are more likely to emigrate from their home country. We will propose alternative explanations for the lack of difference in mental health status and service use between immigrant and Israel-born adolescents. One is based on the assumption that Jewish immigration to Israel has unique characteristics that distinguish it from immigration to all other countries. The state promotes and encourages immigration, as the absorption of Jewish immigrants is one of the founding principles of the state [21,22]. It provides instrumental support in terms of, housing, financial aid and free Hebrew language courses [23] and uses previous immigrants as cultural facilitators to help the newcomers bridge the cultural gap. Therefore, Jewish immigrants to Israel are not expected to share the characteristics of immigrants elsewhere.

Another possible explanation for the lack of influence of immigration on diagnosed mental disorders in our population can be explained by a 'migration-convergence' hypothesis [24], which posits that, compared to the host population, immigrants may have lower or higher mental health risk before or immediately after their arrival, but that the risk level converges with the general level the longer the immigrants live in the host country [7]. Indeed, 54% of the adolescents in our study immigrated before age 5 and an additional 32% between ages 6 and 10 and, therefore, were effectively acculturated. Certainly, the hypothesis claiming that immigrants' mental health advantage may be due to strict selection by the host authority, as is the case in Canada or Australia [25,26], is not pertinent for Israel, where no selection

criterion other than Jewish identity, as stipulated by the Law of Return, is activated.

However, one must consider the possibility that migrants may underreport behavioral problems because they are aware of their low status in their new society, and "therefore do not want to add fuel to the negative perception held by the native population about their children or themselves" [27].

Emotional and behavioral problems

In accord with studies that find more externalizing behavioral problems in immigrant adolescents [28], we found that immigrant mothers attributed to their children more conduct and hyperactivity-inattention problems and less prosocial behavior than mothers of their Israeli-born peers. However, unlike their mothers, adolescents rated themselves as having less peer problems than the Israeli-born youth. This mother-adolescent discrepancy could be explained by the possibility that adolescent immigrants have adopted the more permissive norms of their host society and see their behavior as normative, while their mothers, with stricter behavioral codes for children and adolescents, imported from their home countries, see their children's behaviors as problematic. Beside the possibility that there are actual differences in tolerance thresholds for adolescents' behaviors in different cultures, this inconsistency also may be explained by cultural differences in reporting of problem behaviors, or bias in self- and parent-reported information [27].

Services use

Another main finding was that mothers of immigrant and Israeli-born adolescents had similar consultation rates for mental health concerns, although divorced mothers of immigrants were 4 times less likely than mothers of Israel-born adolescents to consult someone for emotional or behavioral concerns regarding their child.

Service utilization is a function of multiple factors [29,30]. In this study, need for mental health care was defined by the presence of a diagnosed internalizing or externalizing disorder. Unlike studies that have shown a substantial gap between mental health care needs and mental health service utilization among adult immigrants [31,32], we found no such difference between our adolescent immigrant population and their Israeli-born peers. One possible explanation is that the immigrant adolescents had higher educated mothers and the same rates of paternal employment as those of their Israeli-born peers and thus were not in an economically disadvantaged situation, which would explain the lower use of services. Another plausible explanation is the similar prevalence rates of mental disorders in both populations or the absence of barriers to access for Israeli immigrants [33].

These findings are comparable with results on adult immigrants obtained from the Israel National Health Survey (INHS) [34] carried out in 2003 – 2004, which found that adult immigrants who had lived in Israel on average nine years were as likely as veteran Israelis to suffer from mood and anxiety disorders and to use health care services [35]. Since time since immigration is one of the key indicators of acculturation [36,37], it is not surprising that both generations are similar and do not differ from veteran Israeli population with regard to mental morbidity and service use rates. The higher emotional distress found among immigrant parents [35] may partly explain their attribution of more behavioral problems to their children than parents of Israeli-born peers and significantly less prosocial behavior. However, parental distress or depression was not measured in our study and

therefore this explanation is advanced as a hypothesis for future research.

Risk factors

Multivariate analyses showed that marital status of the mother was the only significant sociodemographic predictor for any mental disorder in the adolescent. This finding is consistent with studies showing that children in single-mother families are at significantly increased risk of psychiatric problems [10,38], although other studies have found no such association [39]. They also showed that marital status of the mother, independently of immigrant status, predicted higher use of services by single or divorced mothers for mental health concerns of their children. It is possible that children of single mothers, although well educated, had more unmet needs [40]. Another possibility is that divorced mothers are likely to have fewer children and adolescents growing up with fewer siblings may feel lonelier and depressed [10].

Limitations and strengths

The main limitation of this study is the small size of the immigrant sample, due to which we included all immigrants in one category and were not able to differentiate between immigrants from different countries or identify cultural biases. The small sample size also precluded between-group comparisons on the specific mental disorders and therefore all analyses were made regarding 'any mental disorder'.

Another limitation, which most studies conducted in non-clinical populations share, is the limited number of risk factors considered. We did not assess family stressors and conflicts, culture of origin or personal characteristics and resources of the immigrant parents (e.g. self-esteem, self-efficacy, coping styles for stressful situations, and perceived social support) or familial genetic predisposition factors, all of which are important components of the stress process and the stress-vulnerability model of psychopathology [41].

There are also considerable methodological strengths to this study that was based on rigorous sampling procedures and a reliable representative sample of the nationwide Israeli adolescent population, had a relatively high response rate, interviewed respondents in their mother tongue (Hebrew, Arabic or Russian), and used validated instruments that increased the likelihood that the respondents understood the questions.

Conclusion

The results suggest that mental health of the immigrant adolescents is comparable to that of their Israel-born peers, although immigrant adolescents living with single/ divorced mother are at risk of underutilization of mental health services when needed. However, given the small number of cases, our results might not be robust enough and there is a probability they might not replicate in future studies with a larger sample. Thus, we recommend that marital status of mothers of immigrants be included as an important study variable in future studies with larger sample size in order to enable policymakers to plan services and prevention programs for both immigrant and native adolescent population.

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