

Drinking Patterns of Recent Russian Immigrants and Other Israelis: 1995 National Survey Results

ABSTRACT

Objectives. A large group of Russian Jews has immigrated to Israel since 1989. Russia has one of the highest alcohol consumption levels in the world, while the level in Israel is among the lowest. This study was designed to provide empirical information on the drinking of these Russian immigrants compared with the drinking of other Jewish Israeli residents.

Methods. The data came from a 1995 national survey of drinking in Israel. Of 4984 Israelis, 292 were Russian immigrants who had arrived since 1989. Russians were compared with other respondents on several drinking variables. Logistic regression was the principal method of analysis, allowing the relationship to be tested with demographic and cultural variables controlled. A subsidiary analysis was conducted on data about parents' drinking from a survey of secondary school students.

Results. There were significant effects for Russian status for several drinking variables, with significant odds ratios ranging from 1.45 to 2.38. These results indicate that recent Russian immigrants to Israel drink more than their Israeli counterparts.

Conclusions. Further investigation of the stability of these patterns may provide valuable information about cultural effects on drinking. (*Am J Public Health*. 1999;89:1212-1216)

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Wide variation exists in per capita alcohol consumption between countries and between ethnic groups within countries.^{1,2} Large migrations between countries with contrasting alcohol consumption patterns provide the opportunity to investigate the relationship of cultural and genetic factors to drinking and to alcohol dependence. Israel and its diverse immigrant groups have previously provided unique opportunities for epidemiologic research.³ However, before relationships between culture, genetics, and alcohol can be studied, a contrast in drinking patterns between the incoming immigrant group and the receiving country must be documented. The purpose of this research was to investigate whether such a contrast existed.

Since 1989, when Soviet policy on emigration changed,⁴ Israel has received almost 800 000 immigrants from the former Soviet Union. Russian immigrants now constitute more than 10% of Israel's population⁵; about 90% of these immigrants are Jewish.⁶ At present, little is known about the drinking patterns of these recent immigrants compared with those of other Israelis. Assumptions about their drinking should not be based on the behavior of Russian Jewish immigrants from the late 1880s.⁷ The earlier immigrants were physically and culturally isolated from other Russians. Russian Jews now speak Russian, are educated in public schools, generally have low religious involvement, and do not stand out from other Russians in dress or cuisine.⁸ According to Lukomskaya,⁹ Russian Jews drink similarly to other Russians, but at a lower average consumption level owing to their concentration in white-collar occupations and urban areas.

Russia has a long history of high levels of alcohol consumption and alcohol-related problems.¹⁰ Despite shortcomings in the existing data,¹¹⁻¹³ the per capita consumption level of the former Soviet Union, corrected for illegally produced liquor, is now the highest in the world.¹³ In contrast, Israel has one

of the lowest levels of alcohol consumption and alcohol-related problems. Per capita consumption figures reflect only beer and wine consumption, but they show that Israel is 46th out of 51 countries.¹⁴ Further, Dohrenwend et al.³ found very low rates of alcohol disorders among native Israelis from different ethnic groups compared with US rates at around the same time.¹⁵ Thus, recent Russian arrivals in Israel are entering a culture that differs markedly from their own in terms of per capita alcohol consumption.

To date, the drinking of Russian Jews in Israel has received little empirical investigation. Much information is impressionistic, such as reports of expanded liquor sections in supermarkets since the Russian immigrants arrived. In an organization designed to assist the adjustment of troubled adolescents in Jerusalem, Russians drank more than other Israeli adolescents.¹⁶ About a third of the patients in Israeli alcoholism treatment centers are Russian, a proportion considerably higher than their representation in the population as a whole.¹⁷ In a comparison of 162 immigrant and Israeli-born adolescents whose parents had immigrated from the Soviet Union, 54% of the immigrant adolescents had consumed alcohol recently and 4% had gotten drunk, compared with 34% and 1%, respectively, of the Israeli-born youths.¹⁸

To provide empirical information on this issue, we used data from a 1995 national survey conducted in Israel. The survey was

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not designed for this purpose, but it did provide relevant information. We also conducted subsidiary analyses on data from a national survey of Israeli high school students that included questions on the drinking of their parents.

Methods

Sample Design

The 1995 Israeli national household survey of drinking and drug use, designed at Tel Aviv University, was one of a series of national surveys sponsored by the Israel Anti-Drug Authority, a government agency. The sample was designed to represent Israeli household residents between the ages of 18 and 40 years, excluding individuals who lived on kibbutzim (about 2.5% of the population), individuals in military service not living at home, and institutionalized individuals. The country was divided into areas, and clusters of 10 households were selected within areas. Areas were stratified by city size so that individuals were represented from large (population > 20 000), intermediate, and small cities.¹⁹

Within each sampled household, 1 adult within the age range 18 to 40 years was selected to participate. Women were over-sampled to constitute 60% of the sample. For half of the households sampled, household members were sampled by the Trolldahl and Carter method. In the other half, the first available adult within the age range was selected. The 2 halves of the sample showed no significant differences on any of a range of demographic variables.

Interviews were administered by trained interviewers in Hebrew or Arabic. Therefore, individuals who spoke only Russian were not included. Although outright refusals to participate were very rare, tabulations were not kept on households where no one was ever home. Thus, individuals who were rarely home were probably underrepresented in the sample, and a final household response rate was not available.

The full sample numbered 5998, about 1/1000 of the population of Israel. This full sample included Arabs. Because the research question focused on Jewish groups and because almost no Russian immigrants live in Arab areas, Arab respondents were not included in the subset analyzed below. This left a sample of 4984 subjects.

We also conducted a subsidiary analysis, using a different sample, to gain information on the same issue from a different vantage point. During 1995, the same researchers conducted a national survey of Israeli school

classes (grades 7 to 12) that included 6529 students. The survey included questions on parental drinking and parental country of origin. Participation in the study was anonymous, protecting the confidentiality of students and parents. We analyzed the data on parental drinking from the 4477 non-Arab students. The student survey was not linked to the adult data but it can be considered a type of informant report on the same issue, without the difficulties presented by adult household residents who were not at home.

Characteristics of the Adult Sample

As shown in Table 1, women represented 60% of the sample, as intended. About one third of the subjects were between 18 and 24 years of age. Slightly over half of the non-Russian Israelis and a larger proportion of Russian immigrants were married. Few respondents in either group had less than a high school education, but many more Russians than other Israelis reported having education beyond the high school level. The Russian immigrants were less likely than the other Israelis to be religious. The non-Russian Israeli sample included only 49 immigrants from other countries, reflecting the low rates of immigration from other countries to Israel since 1955 (the year of birth of respondents aged 40 at the time of the survey).

Measures

The measures were derived from the survey interview, which had been developed over the course of several previous surveys. Recent Russian immigrant status was defined on the basis of 2 items: country of birth and year of immigration to Israel. All those born in the former Soviet Union who immigrated in 1989 or more recently were defined as the Russian immigrant group. Age was used in continuous form. Religiosity was defined by 3 levels of adherence to strict religious observance: observance of most or all requirements, observance of some requirements, and no observance. Marital status was dichotomized as married vs all other marital statuses.

Questions on alcohol consumption were modeled on the questions of Johnston et al.²⁰ and have shown good reliability.²¹ Separate questions covered consumption of wine (excluding the drinking of wine as a ritual religious observance), beer, and hard liquor within the last 12 months and within the last 30 days. Respondents were asked to indicate on a 7-point scale the number of times they had drunk beer, wine, or liquor during the reference period (e.g., "How many times did you drink beer during the last 30 days?"). Frequency of drunkenness as self-defined by

respondents was also ascertained. For several analyses, we dichotomized the scales into 2 levels because of their skewed distributions. We also created a variable representing the sum of drinking occasions in the last year, categorized as never, 1 to 24 times, or 25 or more times.

In the school survey, students were asked simple questions about their parents' consumption of beer and hard liquor (wine was not included). If our purpose had been to estimate the quantity and frequency of parental drinking, the students would not have been an acceptable source of information. However, our purpose was to determine whether there was a general between-groups difference. We consider the student reports as adequate supporting evidence because we saw no reason to expect differences in under-reporting between immigrant and Israeli-born students.

Analysis

The multivariate models involved 2 types of outcome: binary and ordinal. For the binary outcomes, logistic regression models were run with SAS software (PROC LOGISTIC; SAS Institute, Inc, Cary, NC). Binary outcomes were (1) any drinking during the past year vs none, (2) any drinking during the past month vs none, and (3) getting drunk during the past year vs not getting drunk. To formally test the fit of the logistic regression models, we used Hosmer-Lemeshow goodness-of-fit tests.²² A *P* value greater than .05 indicates that the model fit is adequate.

For the adult sample, for the 3-level ordinal outcome representing the sum of the number of drinks during the past year, a generalized logit model was used. This model compares 2 groups of drinkers (those who drank 1–24 times and those who drank 25 or more times during the past year) with the baseline group (nondrinkers). A cumulative logit model could have been used, but we chose the generalized logit model because it provides more precise information on the odds for each of the 2 groups of drinkers compared with the nondrinking group. The generalized logit model was fitted with SAS software (PROC CATMOD). Age, sex, education, level of religiosity, and marital status were included as control variables. Odds ratios and 95% confidence intervals (CIs) were obtained from the regression parameters for each of the 2 levels compared with the baseline group of nondrinkers.

The student data were analyzed with logistic regression and binary outcomes (parental drinking of beer, parental drinking of hard liquor). The control variables were similar to those used in the analysis of the adult data.

Results

More Russian immigrants than other Israelis reported drinking in the last 12 months and in the last 30 days (Table 1). The unadjusted odds ratios (not shown in Table 1) were 2.36 (95% CI = 1.77, 3.16) for last 12 months, 2.00 (95% CI = 1.57, 2.55) for last 30 days, 1.61 (95% CI = 1.15, 2.27) for getting drunk in the last 12 months, and 2.43 (95% CI = 1.91, 3.09) for drinking 25 or more times in the last 12 months.

Table 2 shows the association between Russian group membership and drinking in the last year, drinking in the last 30 days, and being drunk within the last year. Russian status had a significant effect on drinking in the last year and drinking in the last 30 days, but showed only a trend toward significance for being drunk. The logistic models provided an adequate fit to the data. Numerous other models were constructed and tested with other potential control variables, including income, occupation, children (yes/no), and different interactions of these control variables. The significance levels of the control variables changed in these analyses, and the model fits were not always adequate. However, the effect of Russian status was consistently significant and was of similar magnitude in all models tested.

Table 3 shows the results of the generalized logit model of drinking in the last 12 months. Recall that this model compares respondents who drank 1 to 24 times and those who drank 25 or more times with the baseline group who did not drink. With other covariates controlled, the odds of being in the heavier drinking group rather than the non-drinking group were 2.38 times higher for Russians than for non-Russians. The corresponding odds ratio for being in the lighter drinking group was 1.45.

In the analysis of the student survey data, we analyzed beer and hard liquor consumption separately. The analysis for beer did not show a significant effect for Russian status. This finding was not surprising, since the typical Russian drink is distilled alcohol or vodka rather than beer.²³ When we tested the relationship of Russian status of parents to consumption of hard liquor, the unadjusted odds ratio without controlling for other factors was 1.51 (95% CI = 1.20, 1.91). When we controlled for religiosity, parental education, and father's occupation (control variables that provided the best fit of the model to the data), the odds ratio for Russian status was 1.42 (95% CI = 1.10, 1.83). In various other models, the effect for Russian status remained consistent while the relationships between various control variables and the outcome changed from model to model.

TABLE 1—Demographic and Alcohol Consumption Characteristics (%) of Recent Russian Immigrants^a to Israel and Other Jewish Israelis, 1995

	Recent Russian Immigrants (n = 292)	Other Israelis (n = 4692)	Total (n = 4984)
Sex			
Male	42.5	39.9	40.1
Female	57.5	60.1	59.9
Age, y			
18–24	29.1	34.0	33.7
25–34	37.3	38.0	38.0
35–40	33.6	27.9	28.3
Marital status			
Married	59.5	53.5	53.9
Unmarried	40.5	46.5	46.1
Education			
Less than HS	1.7	2.8	2.7
HS	38.7	69.7	67.8
More than HS	59.6	27.6	29.4
Religiosity			
None	61.5	31.6	33.4
Low	19.9	9.7	10.3
Moderate	16.2	41.8	40.3
High	2.4	16.9	16.0
Drank alcohol in last 12 months			
Yes	79.5	62.1	63.1
No	20.5	37.9	36.9
Got drunk in last 12 months			
Yes	14.4	9.4	9.7
No	85.6	90.6	90.3
Drank alcohol in last month			
Yes	62.7	45.6	46.6
No	37.3	54.4	53.4
Times drank in last 12 months			
0	20.5	37.9	36.9
1–24	36.0	38.0	37.9
25+	43.5	24.1	25.2

Note. HS = high school.

^aImmigrants from the former Soviet Union who arrived in Israel in 1989 or later.

Thus, the student reports showed a relationship between Russian immigrant status and parental drinking of hard liquor that was similar to the relationship shown by the adult survey.

Discussion

These analyses indicate that recent Russian immigrants to Israel are more likely to drink than are other Israelis. This relationship was found for drinking in the previous 12 months, for drinking in the previous 30 days, and for frequency of drinking, with a trend toward significance for being drunk in the last 12 months. The magnitude and statistical significance of the relationship between Russian immigrant status and drinking were stable over a wide range of models. The results were consistent between the adult survey and the survey of students that included questions on parental drinking.

Some potential methodological drawbacks of this study must be considered. First, because of the lack of a final household response rate, nonresponse bias cannot be ruled out. If heavy drinkers in Russian and non-Russian households were not equally likely to be at home, such a bias may have occurred. In addition, the absence of weights creates the possibility that individuals representing different proportions of the underlying population may have unduly influenced the results. Thus the present findings must be considered preliminary. In our view, the results of this study represent a considerable improvement over the anecdotal information that was available previously. However, stronger support for these findings would be provided by a survey in which response and weighting information was available. In addition, we cannot generalize our findings to individuals older than 40 years or to institutionalized individuals.

The fact that Russians were underrepresented in this survey must also be considered.

Because interviews were not conducted in Russian, immigrants who spoke only Russian—possibly the most recent arrivals and those with the lowest degree of acculturation to Israel—were excluded. To address this concern, we calculated the proportion of respondents in the sample per 1000 Russian immigrants in the total population for each of the years 1990 through 1994 (the survey was conducted early in 1995). A decrease in this proportion in the more recent years would have indicated that the most recent immigrants were underrepresented to a greater degree. We saw no evidence of such a drop-off in representation between the years 1990 and 1994. However, the proportion of new Russian immigrants in the sample shows that the entire group was underrepresented compared to the general population. Further research would clearly be improved by offering the interview in Russian.

The findings of this study pertain only to alcohol consumption and not to alcohol dependence as defined by the *Diagnostic and Statistical Manual of Mental Disorders*²⁴ or the *International Classification of Diseases*.²⁵ Information about alcohol dependence would add considerably to knowledge in this area.

Furthermore, information on the immigrants' offspring as they enter the years of risk for alcohol dependence might offer unique information about the conjunction of genetic and cultural risk factors for the initial occurrence of alcohol dependence. Addressing the issue of drinking among adolescents would involve a separate and complex set of issues, since adolescents' drinking patterns are usually quite different from those of adults. A study taking into account parental and individual drinking, acculturation issues, and peer networks would be interesting, but such a study was outside our scope.

The survey did not ascertain the republic of origin of the immigrants from the former Soviet Union. According to the Central Bureau of Statistics in Jerusalem, approximately 80% of the immigrants came from western republics, mainly Russia and Ukraine. Drinking practices are not entirely uniform across regions and republics of the former Soviet Union, so future studies should obtain this information.

In this study, we did not include a variable representing length of stay in Israel. To address this issue in the full sample would have required an adequately large subgroup of immigrants from other countries who had been in Israel for the same period of time. Since the number of non-Russian survey respondents who arrived during the years of the Russian immigration was very small ($n = 49$), stable results could not be obtained.

TABLE 2—Risks for Alcohol Outcomes Among Recent Russian Immigrants^a to Israel and Other Jewish Israelis (Logistic Regression Models, Including Control Variables), 1995

	Odds Ratio (95% Confidence Interval)		
	Drinking in Last 12 Months	Drinking in Last 30 Days	Drunkenness in Last 12 Months
Age	1.01 (0.99, 1.02)	1.02 (1.01, 1.03)	0.98 (0.96, 1.00)
Male vs female	4.11 (3.58, 4.71)	4.08 (3.60, 4.62)	2.65 (2.17, 3.24)
Higher vs lower educational level	1.34 (1.18, 1.52)	1.26 (1.10, 1.42)	0.99 (0.81, 1.22)
Lower vs higher religiosity	1.59 (1.45, 1.73)	1.59 (1.45, 1.73)	1.66 (1.42, 1.94)
Married vs all others	0.89 (0.76, 1.04)	0.89 (0.76, 1.04)	0.52 (0.40, 0.67)
Recent Russian immigrant vs other	1.77 (1.30, 2.41)	1.52 (1.16, 1.98)	1.39 (0.97, 2.00)
Hosmer-Lemeshow goodness-of-fit test (P)			
	12.11 (0.15)	10.24 (0.25)	6.26 (0.62)

^aImmigrants from the former Soviet Union who arrived in Israel in 1989 or later.

TABLE 3—Odds of Being in Lighter or Heavier Drinking Category (Reference: Nondrinking Category) Among Recent Russian Immigrants^a to Israel and Other Jewish Israelis (Multicategory Logistic Regression Model, Including Control Variables), 1995

	Odds Ratio (95% Confidence Interval)	
	Lighter Drinking Category	Heavier Drinking Category
Age	0.99 (0.98, 1.01)	1.03 (1.02, 1.05)
Male vs female	2.58 (2.22, 2.99)	9.26 (7.79, 11.00)
Higher vs lower educational level	1.26 (1.10, 1.45)	1.49 (1.27, 1.75)
Lower vs higher religiosity	1.39 (1.27, 1.53)	2.12 (1.88, 2.39)
Married vs all others	0.97 (0.82, 1.15)	0.73 (0.59, 0.89)
Recent Russian immigrant vs other	1.45 (1.04, 2.04)	2.38 (1.67, 3.38)

Note. Lighter drinking was defined as drinking on 1 to 24 occasions in the last 12 months; heavier drinking was defined as drinking on 25 or more occasions in the last 12 months.

^aImmigrants from the former Soviet Union who arrived in Israel in 1989 or later.

A comparison of recent Russian immigrants with immigrants from other countries who had been in Israel many more years would not be informative. A within-Russian group analysis of length of stay would require information on region of origin, which was not uniform over years since 1989. Other potential selection factors were also not included in the data set. Thus, this question must await a survey that provides the necessary information. The smaller wave of Russian immigrants who arrived in Israel during the 1970s is not an appropriate comparison group because they came from a different geographic area of the former Soviet Union and because their socioeconomic background was much lower.

In the United States, several studies of acculturation level and drinking in immigrant groups (e.g., Japanese and Mexicans²⁶⁻²⁹) have shown straightforward effects for women but mixed findings for men. Studying acculturation effects for men in the United States is complicated by the variability among different groups of male drinkers,

resulting in a very complex background "culture." In Israel, a country where drinking practices are more homogeneous among men, acculturation effects may emerge more clearly for both sexes. At the same time, potential influences on the drinking patterns of the recent Russian immigrants to Israel are many, in addition to their cultural background. These may include the widespread availability of alcohol in Israel despite low consumption rates, the immigration experience itself,³⁰ and genetic factors.³¹

There are numerous strengths to this study. First, the sample size allowed the testing of numerous models that controlled for a wide range of factors. The fact that the effect for Russian status stayed consistent over different models speaks to the strength of the relationship found, as does the fact that this effect is not diminished by other variables. Second, the questions were asked in a structured, systematic way for all respondents, and the items had been previously tested. Third, the data-analytic methods allowed for full investigation of the relationship between

group membership and drinking status and for different statistical approaches to different dimensions of the relationship. Fourth, the finding on Russian status was consistent in the adult data and in the data reported by students on their parents. The consistency in results despite the differences in study methods supports the relationship found in the adult survey. The present results provide initial evidence concerning a phenomenon that may be useful to explain in its own right and that may shed some light on more universal questions pertaining to alcohol consumption and dependence. □

Contributors

G. Rahav (with Israeli colleagues) planned the survey that provided the data for the present paper, and contributed to planning the secondary analysis and to writing the paper. D. Hasin planned the secondary analysis and wrote the paper. A. Paykin conducted the statistical analysis of the data and contributed to writing the paper. G. Rahav and D. Hasin supervised the data analysis. All 3 authors are guarantors for the integrity of the research.

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