Differences in Drinking Patterns among Ashkenazic and Sephardic Israeli Adults*

EFRAT AHARONOVICH, PH.D.,† DEBORAH HASIN, PH.D.,† GIORA RAHAV, PH.D.,† JAKOB MEYDAN, M.S.,† AND YEHUDA NEUMARK, PH.D.†

Columbia University College of Physicians and Surgeons/New York State Psychiatric Institute, New York, New York

ABSTRACT. *Objective*: Since its foundation in 1948, Israel has received large waves of immigrants, mainly from Europe (Ashkenazic Jews, or Ashkenazim) and from North Africa and other Middle Eastern countries (Sephardic Jews, or Sephardim). In Israeli society, Ashkenazic Jews are an advantaged ethnic group, whereas Sephardic Jews are relatively disadvantaged. Little is known about the differences in drinking patterns between these two groups. The relationship between ethnicity and alcohol consumption is investigated in a 1995 data set from a sample of 4,984 subjects (60% women). *Method*: The data were collected as part of a national Israeli survey. Standardized questions covered drinking and becoming drunk in the last 12 months and drinking in the last 30 days. Unadjusted odds ratios (ORs) indicated the association of group status with the drinking variables. ORs adjusted for potential confounders were created with logistic regression. *Results*: Unadjusted ORs indicated a negative association between all alcohol measures and Sephardic group status. ORs adjusted for such factors as socioeconomic status and religiosity produced similar results. *Conclusions*: This study indicates that Sephardim were less likely to drink or become drunk than were Ashkenazim. Further work is required to determine if these differences are stable or changing over time and whether such differences can be attributed to cultural or genetic factors. Similarities to U.S. patterns are discussed. (*J. Stud. Alcohol* **62:** 301-305, 2001)

ALCOHOL CONSUMPTION varies greatly between countries and between ethnic groups within countries (Caetano et al., 1998; Cheung, 1993). Studies among whites, blacks and Hispanics in the U.S. (Caetano and Clark, 1998a; Dawson, 1998) have found substantial differences between ethnic groups in such drinking patterns as volume of intake, frequency of drinking and rates of alcohol-related problems. Those in advantaged ethnic groups and of higher socioeconomic status in the U.S. are more likely to be drinkers than abstainers (Caetano and Clark, 1998b; Dawson et al., 1995). However, among those who drink, members of socioeconomically disadvantaged U.S. ethnic groups are more likely to have pathological patterns of drinking and drinking problems (Hasin and Liu, in preparation). Descriptive differences between ethnic groups provide an opportunity to investigate the effects of sociodemographic, cultural and biological influences on alcohol consumption and alcohol use disorders, in the U.S. as well as in other countries.

Israel has been the recipient of large and diverse waves of immigrants since its foundation in 1948. The immigrants have come mainly from Europe, North Africa and the Middle East. Although there is considerable imprecision in the terms, Jews with Western or Eastern European origin are generally referred to as "Ashkenazim" and Jews with North African and Middle Eastern origin are generally referred to as "Sephardim." These two groups serve as the main reference points when speaking of ethnicity within Israeli society. The groups are differentiated not only by origin, but by numerous other factors. These include socioeconomic status (Central Bureau of Statistics, 1998; Dohrenwend et al., 1992; Rahav et al., 1986), cultural differences (e.g., religiosity; Buchbinder et al., 1997), genetic factors (Peretz et al., 1997; Shvidel et al., 1998; Wysenbeek et al., 1993) and distribution of disease (Piura et al., 1997; Zilber and Kahana, 1998). As a group, Ashkenazim are characterized by higher socioeconomic status and more emphasis on secular values. Sephardim are characterized by lower socioeconomic status and can be viewed as a socially disadvantaged ethnic group compared with Ashkenazim; they are also more likely than Ashkenazim to be religious or to uphold religious traditions.

Previous studies in Israel have suggested ethnic group differences in drinking versus abstention, as well as in rates of alcoholism or alcohol problems. The findings of the studies on drinking per se, however, are not in the same direction as the findings on alcoholism. In studies of drinking

Received: August 24, 2000. Revision: December 11, 2000.

*Support for this study was provided by National Institute on Alcohol Abuse and Alcoholism grant K02AA00161 to Deborah Hasin. Support was also provided by the New York State Psychiatric Institute.

†Correspondence and reprint requests should be sent to Dr. Efrat Aharonovich, Substance Treatment and Research Service, Columbia University, New York State Psychiatric Institute, 600 West 168th Street, 2nd floor, New York, NY 10032, or via email to: aharono@pi.cpmc.columbia.edu. Deborah Hasin is with the Columbia University Mailman School of Public Health/New York State Psychiatric Institute, New York. Giora Rahav is with the Department of Sociology, Tel Aviv University, Tel Aviv, Israel. Jakob Meydan is with the New York State Psychiatric Institute, New York, and Yehuda Neumark is with the School of Public Health, Hebrew University of Jerusalem, Jerusalem, Israel.

among Israeli adolescents, those with Ashkenazic fathers were more likely to drink than were those with Sephardic fathers (Teichman et al., 1987a,b). In contrast, Israeli patients in alcohol rehabilitation treatment were significantly more likely to be of Sephardic than Ashkenazic origin (Snyder et al., 1982). Sephardic adults in Jerusalem were more likely to drink excessively than adults from an Ashkenazic background (Baras et al., 1984). Among 4,914 Israeli-born offspring of Jewish immigrants from Europe or North Africa, alcoholism was more frequent in the least educated men of North African (Sephardic) origin (Levav et al., 1993). Drinking versus abstention was not reported in this study, however, and the authors raised questions about their own measurement of alcoholism. These data were all collected some time ago; thus, current information about differences in drinking patterns between adults in the two ethnic groups (Ashkenazim vs Sephardim) is not available. In this study, the relationship between ethnicity and alcohol consumption was investigated in a more recent data set.

Method

Sample design

As described in detail elsewhere (Rahav et al., 1999), the data for this study were collected in a 1995 national household survey of drinking and drug use conducted in Israel. The survey was one of a series of national surveys sponsored by the Israel Anti-Drug Authority. The sample was designed to represent adult Israeli household residents between the ages of 18 and 40, excluding individuals who lived on a kibbutz (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 (e.g., population >20,000), intermediate and small cities (Barnea et al., 1992). Within each sampled household, one adult within the ages of 18 and 40 was selected. Women were oversampled to constitute 60% of the sample. For half of the households sampled, household members were selected using the Troldahl and Carter method (Hasin et al., 1998; Rahav et al., 1999). In the other half, the first available adult within the age range was selected. The two halves of the sample showed no significant differences on any of a range of demographic variables. In-person interviews for the survey were administered in Hebrew or Arabic by trained interviewers. Outright refusals to participate were very rare, but tabulations were not kept on households at which no one was ever home when interviewers came to call. Thus, individuals who were rarely home were probably underrepresented in the sample, and a household response rate was not available. The lack of this response rate is discussed below. The full sample, which included Arabs, numbered 5,998 (i.e., about 1/1,000 of the population of Israel). Because the research question focused on Jewish groups, Arab respondents were not included in the subset ($N = 4,984$) analyzed for this article.

Subjects

Women represented about 60% of the sample, as intended (Table 1). About one third of the subjects were between the ages of 18 and 24; the rest were older. The Ashkenazim were more highly educated than the Sephardim, as expected, and less likely to be religious.

Measures

The measures were derived from items in the interview, which had also been used in several previous surveys. Ashkenazic subjects were defined as those whose personal or family place of origin was Europe, the former Soviet Union, North, Central or South America, Australia or South Africa. Sephardic subjects were defined as those whose personal or family place of origin was North Africa or other countries in the Middle East, including Turkey. An item on religiosity was collapsed to indicate two levels of adherence to religious observance: observance of most or all requirements (high), and all others (low or none). Alcohol

TABLE 1. Demographic and other characteristics of Ashkenazic and Sephardic Jews in Israel, in percent

Characteristic	Ashkenazic ($n = 2,230$)	Sephardic ($n = 2,754$)	Total ($N = 4,984$)
Age			
18-24	40.0	28.7	33.8
25-34	34.3	41.0	38.0
35-41	25.7	30.3	28.3
Gender			
Male	39.1	40.8	40.0
Female	60.9	59.2	60.0
Marital status			
Married	47.9	58.6	53.9
Unmarried	52.1	41.4	46.1
Education			
Less than HS	1.9	3.4	2.7
HS	56.0	77.5	67.9
More than HS	42.1	19.2	29.4
Religiosity			
Low or none	86.5	81.9	84.0
High	13.5	18.1	16.0
Drank alcohol in last 12 months			
Yes	67.9	59.1	63.1
No	32.1	40.9	36.9
Got drunk in last 12 months			
Yes	12.0	7.8	9.7
No	88.0	92.2	90.3
Drank alcohol in last month			
Yes	52.0	42.3	46.6
No	48.0	57.7	53.4

Note: All variables, except gender, are significantly different at the <.0001 level.

TABLE 2. Alcohol outcomes among Ashkenazic and Sephardic Jews in Israel: Logistic regression models, adjusted odds ratios (95% confidence intervals)

Variable	Drinking, 12 months (n = 4,884)	Drinking, 30 days (n = 4,884)	Getting drunk (n = 4,866)
Age (continuous)	0.99 (0.98 - 1.00)	1.00 (0.99 - 1.01)	0.99 (0.97 - 1.00)
Male gender	1.06 (0.94 - 1.20)	1.11 (0.98 - 1.24)	1.39 (1.14 - 1.68)
Higher education level	1.28 (1.13 - 1.45)	1.19 (1.05 - 1.34)	0.94 (0.77 - 1.15)
Higher religiosity	0.50 (0.43 - 0.58)	0.49 (0.41 - 0.57)	0.47 (0.33 - 0.66)
Married (vs all others)	0.82 (0.72 - 0.92)	0.91 (0.81 - 1.02)	0.40 (0.33 - 0.49)
Sephardic	**0.76 (0.67 - 0.86)**	**0.72 (0.64 - 0.81)**	**0.68 (0.56 - 0.83)**
Goodness of fit	8.34 (0.40)	14.49 (0.07)	8.82 (0.36)

consumption measures were modeled on questions of Johnston and O'Malley (1985). These have been shown to have good reliability (Barnea et al., 1987). Separate questions covered wine (excluding wine that was part of ritual religious observance), beer and distilled spirits consumption within the last 12 months and within the last 30 days. Respondents were asked the number of times they drank beer, wine and distilled spirits during the reference periods using seven-point scales (e.g., "How many times did you drink beer during the last 30 days?"). Frequency of getting drunk, as self-defined by respondents, was also ascertained. These variables were dichotomized due to their skewed distributions.

Analysis

The outcome variables were in binary form. The binary outcomes included (1) any drinking during the past year versus none, (2) any drinking during the past 30 days versus none and (3) getting drunk during the past year versus not. Logistic regression models were run using SAS (Version 7) to test the association of Sephardic group status with the alcohol outcome variables, using the Ashkenazic group as the reference group. Age, gender, education, marital status and level of religiosity were controlled in these analyses.

Results

As shown in Table 1, approximately 68% of the Ashkenazic subjects reported drinking within the 12 months prior to the interview, compared with about 59% of the Sephardim (unadjusted odds ratio [OR] = 0.68; 95% CI: 0.61-0.77). About 12% of the Ashkenazim reported becoming drunk in the prior 12 months, compared with about 8% of the Sephardim (unadjusted OR = 0.62; 95% CI: 0.52-0.75). About 52% of the Ashkenazim drank in the last 30 days, compared with about 42% of the Sephardim (unadjusted OR = 0.68; 95% CI: 0.60-0.76). As shown in Table 1, all demographic variables, except gender, differed significantly between the two main groups.

Adjusted ORs derived from the logistic regression models are shown in Table 2. These ORs were adjusted for the effects of other demographic variables in the model. As shown in Table 2, the Sephardim were significantly less likely than were the Ashkenazim to report all three drinking variables. These ORs are somewhat larger (i.e., closer to 1.0) than the unadjusted ORs, indicating that socioeconomic status influenced the findings to some extent. That group differences remained significant, however, indicates that ethnicity appeared to have an independent effect, above group differences, on such factors as socioeconomic status. Hosmer and Lemeshow (1989) goodness-of-fit tests showed that all three models adequately fit the data.

To understand the ethnicity findings more fully, we ran post hoc models for the three drinking outcomes, testing interactions between ethnicity and the control variables. A significant interaction was found between ethnicity and religiosity in the model for drinking in the last month (p = .01). Further exploration with ORs adjusted for the control variables revealed that among the nonreligious subjects, Sephardic Israelis were significantly less likely than their Ashkenazic counterparts to have drunk alcohol in the last year (OR = 0.77; 95% CI: 0.67-0.88), have drunk alcohol in the last 30 days (OR = 0.69, 95% CI: 0.61-0.79) and to have gotten drunk in the last 12 months (OR = 0.67; 95% CI: 0.55-0.83). Religious Sephardic and Ashkenazic Israelis, however, did not differ significantly on any of the three drinking outcomes.

Discussion

The major finding of this study indicates that the prevalence of the three alcohol consumption measures was significantly higher among Ashkenazic Israelis than among Sephardic Israelis. The direction of the effect was the same in all bivariate and multivariate analyses. It is important to note that if the unadjusted ORs had produced this effect, but the effect had been removed when various other factors were controlled, the effect could be attributed to the differences between these other factors in the two ethnic groups. These control variables did appear to exert some effect, since the adjusted ORs were slightly weaker than the unadjusted ORs. However, the control variables did not account for the entire effect, since the OR for the Sephardim remained significantly below 1.0 after controlling for the other characteristics. Therefore, an aspect of ethnicity (or some

factor associated with ethnicity not measured in this study) appears to contribute an effect.

Some methodological aspects of this study must be noted. First, due to the lack of a final household response rate, the effects of nonresponse on the results cannot be ruled out. If drinkers in each group were unequally likely to be at home, nonresponse bias may have occurred. No information is available to evaluate this possibility. In addition, the absence of weights creates the possibility that individuals representing different proportions of the underlying population may have unduly influenced the results. These shortcomings must be taken into account and the present findings considered preliminary. However, the findings come from the only adult data currently available. Stronger support for the findings will clearly be provided from any future survey in which response and weighting information is available.

The many strengths of this study improve the state of knowledge about differences in drinking patterns of Ashkenazic and Sephardic Jews in Israel. First, the sample size allowed for the control of numerous variables known to affect drinking patterns, providing a more rigorous test than simple bivariate comparisons. Second, the questions were asked in a structured, systematic way for all respondents, using items that had been previously tested. Third, this is the only general population data known to us that allows testing of this question in a manner unlikely to be biased by treatment selection.

Previous studies of drinking versus abstention in Israel that provided information on Ashkenazic and Sephardic differences focused largely on adolescents. This study provides more recent information, in a large national sample of adults. Our results, in conjunction with previous results on drinking problems in Israel (Baras et al., 1984; Levav et al., 1993; Snyder et al., 1982), are consistent with U.S. findings that those from socially advantaged racial/ethnic groups in the U.S. are more likely to drink (Caetano and Clark, 1998a; Dawson, 1998), and that such group differences disappear when drinking problems or a diagnosis of an alcohol use disorder are considered (Caetano and Clark, 1998b; Dawson et al., 1995). The relationship between ethnic groups and drinking versus abstention has not previously been investigated controlling for socioeconomic level (e.g., income or education) in U.S. data, but such analyses are currently underway and will be presented shortly (Hasin and Liu, in preparation).

The fact that the Ashkenazic-Sephardic differences in drinking cannot be attributed entirely to socioeconomic or religious differences suggests some other process is involved. One could speculate that a degree of separation or isolation from the influence of European and American culture (including casual drinking) exists among the still somewhat marginalized Sephardim in Israel, reflected by physical separation (e.g., living in nonurban areas). Social or psychological separation/isolation (e.g., having less personal experience with occasions involving drinking that reflect the European/American culture of the Ashkenazim), and having a less positive or receptive attitude towards such practices when contact is made, may also be factors. Such speculations must, of course, be tested empirically in a study designed to address these questions before being considered explanations of the phenomenon. Similar explanations might also apply to disadvantaged groups in the U.S. and could be tested there.

Our exploratory analyses using interaction terms showed that, whereas Ashkenazic Israelis were generally more likely to drink and to be at higher risk of getting drunk than Sephardic Israelis, being highly religious appeared to serve as a protective factor for both groups. These results were obtained in post hoc analyses and, therefore, should be interpreted with caution. The findings are consistent with findings from other studies that indicate religion to be a protective factor against substance use and abuse. To be more certain of these results, they should be replicated in future research.

Rates of current drinkers were low in this data, compared to rates obtained in surveys conducted in the U.S. and elsewhere. This continues to confirm the view of Israel as a country characterized by low alcohol consumption patterns, compared with many European or North American areas.

The findings of this study pertain only to alcohol consumption and not to DSM-IV (American Psychiatric Association, 1994) or ICD-10 (World Health Organization, 1992) alcohol dependence. A survey that covered both alcohol dependence and consumption patterns in the same assessment would add considerably to knowledge in this area. The findings of such a study might then be applied to the development of prevention efforts for disadvantaged groups, aimed at reducing the occurrence of alcohol problems or alcoholism.

Acknowledgments

The authors wish to acknowledge the help of Dr. Rachel Bar-Hamburger, Chief Scientist of the Anti-Drug Authority, who was responsible for the Israeli survey and who assisted in providing the data for this analysis. They also wish to acknowledge the assistance of Dr. Meyer Teichman, one of the principal investigators of the survey.

References

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Washington, DC, 1994.

Baras, M., Harlap, S. and Eisenberg, S. Alcohol drinking in Jerusalem. Alcohol **1:** 435-439, 1984.

Barnea, Z., Rahav, G. and Teichman, M. The reliability and consistency of self-reports on substance use in a longitudinal study. Brit. J Addict. **82:** 891-898, 1987.

Barnea, Z., Rahav, G. and Teichman, M. Alcohol consumption among Israeli youth-1989: Epidemiology and demographics. Brit. J. Addict. **87:** 295-302, 1992.

BUCHBINDER, J.T., BELU, Y. AND WITZUM, E. Ethnic background and antecedents of religious conversion among Israeli Jewish outpatients. Psychol. Rep. **81** (3, pt 2): 1187-1202, 1997.

CAETANO, R. AND CLARK, C.L. Trends in alcohol-related problems among whites, blacks, and Hispanics: 1984-1995. Alcsm Clin. Exp. Res. **22:** 534-538. 1998a.

CAETANO, R. AND CLARK, C.L. Trends in alcohol consumption patterns among whites, blacks and Hispanics: 1984 and 1995. J. Stud. Alcohol **59:** 659-668, 1998b.

CAETANO, R., CLARK, C.L. AND TAM, T. Alcohol consumption among racial/ethnic minorities: Theory and research. Alcohol Hlth Res. World **22:** 233-238, 1998.

CENTRAL BUREAU OF STATISTICS. Yearly Report No. 50. Jerusalem, Israel: Central Bureau of Statistics, 1998.

CHEUNG, Y.W. Approaches to ethnicity: Clearing roadblocks in the study of ethnicity and substance use. Int. J. Addict. **28:** 1209-1226, 1993.

DAWSON, D.A. Beyond black, white and Hispanic: Race, ethnic origin and drinking patterns in the United States. J. Subst. Abuse **10:** 321-339, 1998.

DAWSON, D.A., GRANT, B.F., CHOU, S.P. AND PICKERING, R.P. Subgroup variation in U.S. drinking patterns: Results of the 1992 National Longitudinal Alcohol Epidemiologic Study. J. Subst. Abuse **7:** 331-344, 1995.

DOHRENWEND, B.P., LEVAV, I., SHROUT, P.E., SCHWARTZ, S., NAVEH, G., LINK, B.G., SKODOL, A.E. AND STUEVE, A. Socioeconomic status and psychiatric disorders: The causation-selection issue. Science **255:** 946-952, 1992.

HASIN, D. AND LIU, X. Ethnicity, social class, drinking and dependence: U.S. 1992, in preparation.

HASIN, D., RAHAV, G., MEYDAN, J. AND NEUMARK, Y. The drinking of earlier and more recent Russian immigrants to Israel: Comparison to other Israelis. J. Subst. Abuse **10:** 341-353, 1998.

HOSMER, D.W. AND LEMESHOW, S. Applied Logistic Regression. New York: John Wiley & Sons, 1989.

JOHNSTON, L.D. AND O'MALLEY, P.M. Issues in validity and population coverage in student surveys of drug use. In: ROUSE, B.A., KOZEL, N.J. AND RICHARDS, L.G. (Eds.) Self-Report Methods of Estimating Drug Use: Meeting Current Challenges to Validity. NIDA Research Monograph No. 57, DHHS Publication No. (ADM) 85-1402, Washington: Government Printing Office, 1985, pp. 31-54.

LEVAV, I., KOHN, R., DOHRENWEND, B.P., SHROUT, P.E., SKODOL, A.E., SCHWARTZ, S., LINK, B.G. AND NAVEH, G. An epidemiological study of mental disorders in a 10-year cohort of young adults in Israel. Psychol. Med. **23:** 691-707, 1993.

PERETZ, H., MULAI, A., USHER, S., ZIVELIN, A., SEGAL, A., WEISMAN, Z., MITTELMAN, M., LUPO, H., LANIR, N., BRENNER, B., SHPILBERG, O. AND SELIGSOHN, U. The two common mutations causing factor XI deficiency in Jews stem from distinct founders: One of ancient Middle Eastern origin and another of more recent European origin. Blood **90:** 2654-2659, 1997.

PIURA, B., BAR-DAYAN, A., COHEN, Y., YANAI-INBAR, I. AND GLEZERMAN, M. Endometrial carcinoma in the south of Israel: Study of 231 cases. J. Surg. Oncol. **66:** 189-195, 1997.

RAHAV, M., GOODMAN, A.B., POPPER, M. AND LIN, S.P. Distribution of treated mental illness in the neighborhoods of Jerusalem. Amer. J. Psychiat. **143:** 1249-1254, 1986.

RAHAV, G., HASIN, D. AND PAYKIN, A. Drinking patterns of recent Russian immigrants and other Israelis: 1995 national survey results. Amer. J. Publ. Hlth **89:** 1212-1216. 1999.

SHVIDEL, L., SHTARLID, M., KLEPFISH, A., SIGLER, E. AND BERREBI, A. Epidemiology and ethnic aspects of B cell chronic lymphocytic leukemia in Israel. Leukemia **12:** 1612-1617, 1998.

SNYDER, C.R., PALGI, P., ELDAR, P. AND ELIAN, B. Alcoholism among the Jews in Israel: A pilot study. I. Research rationale and a look at the ethnic factor. J. Stud. Alcohol **43:** 623-654, 1982.

TEICHMAN, M., BARNEA, Z. AND RAHAV, G. Alcohol consumption among Israeli adolescents: A decade of research. Israel J. Psychiat. Relat. Sci. **24:** 281-288, 1987a.

TEICHMAN, M., RAHAV, G. AND BARNEA, Z. Alcohol and psychoactive drug use among Israeli adolescents: An epidemiological and demographic investigation. Int. J. Addict. **22:** 81-92, 1987b.

WORLD HEALTH ORGANIZATION. The ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines, Geneva: World Health Organization, 1992.

WYSENBEEK, A.J., LEIBOVICI, L., WEINBERGER, A. AND GUEDJ, D. Expression of systemic lupus erythematosus in various ethnic Jewish Israeli groups. Ann. Rheum. Dis. **52:** 268-271, 1993.

ZILBER, N. AND KARANA, E. Environmental risk factors for subacute sclerosing panencephalitis (SSPE). Acta Neurol. Scand. **98:** 49-54, 1998.