VI. Alcohol Consumption Patterns among Mexican American Mothers and among Children from Single- and Dual-Headed Households: Findings from HHANES 1982–84

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Abstract: Data from the southwestern United States sample of the Hispanic Health and Nutrition Examination Survey were employed to compare the patterns of alcohol use among Mexican American mothers and children in female-headed households with use patterns among mothers and children in couple-headed households. Single female heads of household drank more alcoholic beverages on more days than females from dual-headed households. As a whole, the children of single heads of household still living at home did not demonstrate significantly different drinking patterns from their dual-headed household counterparts. While male children of single-headed households drank more days and total drinks than their dual-headed household counterparts, female children of dual-headed households drank more days and total drinks than female children from single-headed households. [*Am J Public Health* 1990; 80(Suppl):36–41.]

Introduction

The number of single female-headed families in the United States has been increasing during the past three decades. By 1984 over 25 percent of all families that included children were female-headed.[1] Data from Bean and Tienda[2] indicate that 36.5 percent of Puerto Ricans, 18.9 percent of Mexican Americans, and 16.0 percent of Cuban Americans lived in single female-headed families in 1980.

Studies indicate that Hispanic female-headed families are exposed to a variety of potential stressors, such as poverty,[3,4] lack of health insurance,[5] lack of child health care,[6] and lack of social support.[6,7] This suggests they may also be at higher risk for behaviors that have been associated with higher levels of stress, such as alcohol use. Women who had never been married or who were divorced or separated have been found to have lower rates of abstention and higher rates of heavier drinking,[8] especially if cohabitating.

In our analysis of the Hispanic Health and Nutrition Examination Survey data, we attempted to determine if mothers and children in female-headed households (i.e. no male head of household present) displayed alcohol drinking patterns that reflected a greater quantity and frequency of alcohol consumption than did the drinking patterns among the mothers and children from dual-headed households (i.e. both mother and father present) and if factors such as age, acculturation level, education level, and socioeconomic status modified any such relation between household type and drinking patterns. Previous studies[9] have suggested that such factors are partially responsible for differences in behavior observed among single female heads of household and females from dual-headed households.

Methods

The Sample

The Hispanic Health and Nutrition Examination Survey (HHANES) was conducted from 1982 to 1984 by the National Center for Health Statistics (NCHS). The objective of this survey was to secure a representative sample of approximately 12,000 Hispanics in three geographic areas: the southwestern United States, Dade County, Florida, and the New York City metropolitan area.[10] Our research was limited to Mexican Americans (i.e. those with a national origin

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recode of 1) from the Southwestern sample, since there were fewer cases of single female-headed families among the Cuban and Puerto Rican populations.

The analyses were restricted to those single female-headed (246) and dual-headed (1,022) families in which the mother and at least one of her children under 19 years of age at the time of the interview were sampled (the analytic sample consists of mothers and all of their children who were included as sample people in the HHANES). This strategy assured greater comparability with other investigations of household headship.[11]

Each individual included in the HHANES does not represent the same number of individuals in the actual population, since certain age groups were under- or over-sampled. Therefore, sample weights were used in order to generate correct estimates.[10,12] All analyses were conducted both unweighted and weighted. The unweighted Ns and the weighted statistics are reported unless otherwise stated.

Measures

Individuals ages 12 to 74 were asked questions about alcohol use in the Adult Person Supplement Questionnaire of the HHANES, including:

- on how many of the prior 28 days they had consumed any beer, wine, or liquor;[13]
- total number of drinks (rather than days) summed across all alcohol types consumed during the reference period. One single female head of household (28 years of age, employed, tenth grade education, and living below the poverty level) reported consuming a total of 789 alcoholic drinks during the 28-day reference period;
- the average number of "drinks per occasion" (computed, by dividing the total number of alcoholic drinks consumed during the reference period by the total number of days the subject drank).

Those who had drunk any type of alcohol during the reference period were classified as "drinkers," all others were "abstainers." In females, "high drinking" was defined as having an average of four or more alcoholic drinks per occasion during the reference period and "low drinking" was defined as having one to three drinks per occasion. In males, the corresponding definitions were six or more and one to five. These created variables parallel those employed by Markides, *et al*, in their 1988 three-generation study.[14]

The HHANES included a modified version of an acculturation scale developed by Cuellar, et al,[15] which has been extensively utilized among Mexican American populations. The modified scale is comprised of eight items pertaining to language preference, language spoken, language subject reads better, language subject writes better, ethnic identification of the subject, ethnic identification of the subject's mother, ethnic identification of the subject's father, and one item that combined the place of birth of the subject's parents. This scale has a minimum value of 1 and a maximum value of 4.9, with higher scores indicating higher levels of acculturation.

Age refers to the actual age of the individual at time of examination. Education is the number of years of school completed. Employment status was coded 1 for employed (part- or full-time) and 0 for non-employed. Poverty was coded as 1 for persons living below the federal poverty cut point and as 0 for those at or above poverty level. Income reflects the combined family income (categorized) over the 12 months prior to the interview. All of the dual heads of household were self-identified as a spouse of a head of household or as head of household with a spouse.

None of these variables had a non-response rate of greater than 10 percent for the mothers and 12 percent for the children. The majority of the questions were answered by nearly all subjects in the sample. Therefore, the effects of non-response are believed to be minimal.

Analyses

The variables (total drinks, total number of drinking days, and drinks per occasion) were examined within each household type for three age categories among the mothers, 17–29, 30–39, 40–74 (approximate tertiles), using analysis of variance.

Analysis of covariance was employed to test the hypothesis that mothers and children of single-headed households would consume more alcohol than those in dual-headed households when controlling for age, acculturation, combined family income, and education. Multiple classification covariance analysis (see, e.g., Nie, et al.[16]) produces adjusted means across the values of each independent variable. Analysis of covariance (ANCOVA) employed total number of drinks as the dependent variable with dual vs single household type as the independent variable. The covariates—including combined family income, acculturation level, education level, and age—were then entered into the procedure. Adjusted means were obtained for each level of the independent variable. This same procedure was employed for two additional ANCOVAs using, respectively, the dependent variables of total number of days drank and number of drinks per occasion.

Analysis of covariance was also employed to explore children's drinking patterns. Three separate analyses were conducted, using total number of drinks, total number of days, and number of drinks per occasion, respectively, as the dependent variables and household type as the independent variable. The covariates in each analysis were age, education, gender, combined family income, and acculturation.

Regression coefficients and their standard errors are presented for the covariates of each analysis of covariance. Standard errors have been adjusted for design effects[10,12] (design effects were calculated employing the Taylor approximation technique available with the SESUDAAN program[17]).

TABLE 1—Sociodemographic Variables of Females and Children (ages 12–18 years) of Single and Dual Households

	Mothers		Children	
Variables	Single Household (n = 246)	Dual Household (n = 1022)	Single Household (n = 201)	Dual Household (n = 624)
Age Categories				
% 12–14 years	NA	NA	44.2	47.0
% 15–16 years	NA	NA	29.1	28.0
% 17–29 years	26.3	36.4	26.7	25.0
% 30–39 years	35.3	37.7	NA	NA
% 40–74 years	38.4	25.9	NA	NA
Education Level				
Mean	8.6	9.1	8.9	8.7
Standard Error	.24	.11	.13	.08
% In Poverty	64.5	26.3	70.3	31.2
Acculturation				
Mean	2.6	2.5	3.3	3.2
Standard Error	.07	.03	.05	.03
% Employed	58.2	44.3	NA	NA
% Males	NA	NA	45.7	51.7
Family Size				
Mean	3.7	4.8	4.9	5.9
Standard Error	.12	.05	.18	.07

SOURCE: NCHS Hispanic Health and Nutrition Examination Survey

Results

An examination of marital status indicated that the majority of single female heads of household were divorced (34.5 percent) or separated (33.1 percent). The remainder of the single females were either widowed (18.1 percent) or had never been married (14.3 percent). Examination of the marital status of the children of these women revealed that just nine were married and four were separated while the remainder had never been married. Tables 1 and 2 present weighted means and percents for the alcohol variables as well as sociodemographic characteristics of mothers and children controlling for household type. More single mothers (and their children) were living in poverty and were more likely to be employed in comparison with their dual-headed counterparts (Table 1). The observed differences between mothers and children regarding percent impoverished and family size are a function of a lack of a one-to-one correspondence between mothers and children (The statistics would be the

TABLE 2—Alcohol Consumption Variables of Females and Children (ages 12–18 years) of Single and Dual Households

	Mothers		Children	
Variables	Single Household (n = 246)	Dual Household (n = 1022)	Single Household (n = 201)	Dual Household (n = 624)
Total No. Days Drank				
Mean	2.0	.9	.7	.7
Standard Error	.32	.11	.19	.11
No. Drinks per Occasion				
Mean	4.7	2.7	4.1	3.8
Standard Error	.47	.13	.54	.38
Total No. Drinks				
Mean	12.4	2.5	3.3	2.5
Standard Error	3.90	.30	1.10	.46
% High Drinkers	46.0	23.8	38.4	23.4
Drinker vs Abstainer				
% Drinkers	44.4	25.0	17.6	17.0

SOURCE: NCHS Hispanic Health and Nutrition Examination Survey

same if there was a one-to-one correspondence.)

There were 92 single female heads and 214 females of couple-headed households who were drinkers; 29 children who were drinkers were in single households and 84 were in dual-headed households; 46 percent of the single female heads of household who were drinkers were high drinkers compared to 24 percent of the female drinkers in dual-headed households (Table 2). Examination of the percentages of drinkers across marital status of single female heads of household indicated that there were a greater proportion of drinkers among those who were divorced (47.9 percent) or separated (41.0 percent) than those who were never married (33.3 percent) or were widowed (32.9 percent).

When sociodemographic characteristics of mothers from single and two-parent households were examined controlling for drinker type (i.e. abstainer vs drinker), families of drinking women tended to be smaller than families of abstaining women. Women who were drinkers had higher education levels and were less likely to be impoverished than abstainers. Drinkers from both household types had a higher level of acculturation and a greater percentage employed than abstainers. The analysis of variance (ANOVA) procedures indicated that there were no significant differences between the three age categories of mothers in single- and dual-headed households for the dependent variables of total number of days drank, total number of drinks, and drinks per occasion.

The proportion of children living in poverty was less among drinkers than abstainers. The children who were drinkers were slightly older. In order to determine if the proportion of drinkers varied across age groups among the children, the percentage of drinkers in three age categories (i.e. 12–14, 15–16, 17–19 years) was computed. While cell sizes were small for the youngest age categories, no significant differences in the percent of drinkers across age groups were found, even when controlling for household type.

Results of the ANCOVA procedure indicated that the weighted crude mean total drinks for single heads of household was 13.17 and for females of dual-headed families it was 2.46. When the covariates—highest level of education achieved, combined household income, age, and acculturation—were taken into consideration, the resulting weighted adjusted means were 21.91 drinks for singles and

.32 drinks for duals (Table 3). The second panel of Table 3 provides the regression coefficients (bs) and standard errors (adjusted for design effects) of the covariates. These results indicate that household type had a strong negative association with total number of drinks consumed, meaning that single heads of household drank more than women from couple-headed families. Acculturation was found to have a positive relationship with total number of drinks, indicating that women who were more acculturated tended to drink more.

Single female heads of household drank a weighted mean of 2.12 days and females of couple-headed households drank a weighted mean of .92 days; adjusted weighted means were 3.34 and .62 days, respectively (Table 3). The strongest relationship found between covariate and number of days drank was a negative one with household type. The remaining three covariates had weaker positive associations with the dependent variable.

The adjusted weighted means of number of drinks among females per occasion were 6.06 for single household heads and 2.23 for dual household heads (Table 3). As with the previous analyses, household type was discovered to have a strong inverse relationship with the dependent variable, number of drinks per occasion.

Because one single female head of household reported 789 drinks for the 28-day reference period, we analyzed the data after excluding her. In addition, a logarithmic transformation of the three dependent variables was computed from the data (including this single head of household) because of the skewed distribution. These new values were utilized in the three ANCOVAs. These procedures produced results comparable to those shown in Table 3.

Since acculturation appeared to have the most influence (other than household type) with respect to the dependent variables, further analyses were undertaken to uncover its relationship with these measures. It was found that among both single and dual female heads of household, acculturation levels were significantly higher among those who consumed more alcohol.

Analysis of covariance was also utilized to examine the children's (ages 12 to 18 years) continuous drinking measures. Covariates included age, education, gender, combined

TABLE 3—Analysis of Covariance of Mothers' Three Continuous Drinking Measures

	Female Heads of Household								
	Total Number Drinks			Total Number Days Drank			Drinks per Occasion		
	N	Crude	Adjusted*	N	Crude	Adjusted*	N	Crude	Adjusted*
Household Type									
Single	202	13.17	21.91	202	2.12	3.34	84	4.83	6.06
Dual	827	2.46	.32	825	.92	.62	195	2.76	2.23
Total (Grand mean)		4.57			1.16			3.38	
Multipe R²		.028			.057			.139	
		b	SE		b	SE		b	SE
Covariates									
Age		−0.107	0.091		−0.004	0.011		−0.025	0.025
Education		0.031	0.311		0.025	0.038		−0.108	0.119
Income		−0.016	0.107		0.045	0.037		−0.036	0.021
Acculturation		1.169	1.092		0.419	0.148		0.259	0.260
Household Type		−10.881	2.334		−1.519	0.340		−1.765	0.564

*Adjusted for acculturation, age, education, and combined family income.
SOURCE: NCHS Hispanic Health and Nutrition Examination Survey.

family income, and acculturation level, with household type as the independent variable. The weighted adjusted mean number of total drinks during the reference period was 3.80 for children in single-headed households and 2.42 for children of couple-headed households, .75 and .68 respectively for total drinking days, 3.59 and 4.17 respectively for drinks per occasion (Table 4).

None of these ANCOVAs examining the continuous drinking variables for the children indicated that household type had a strong relationship with the dependent variables. However, all three analyses exploring the children's drinking patterns demonstrated strong associations between the covariates age, sex, and acculturation and the dependent variables (Table 4). In order to discover how these covariates were related to the continuous drinking variables, several analyses were done. Male children of single heads of household were found to drink more and on more occasions than male children from two-parent homes (Table 5). Whereas, female children of dual-headed households drank more than those from single households. No significant differences were found between high vs low drinkers or abstainers vs drinkers with respect to level of acculturation or age. Drinking children were slightly older than non-drinking children in both single- and dual-headed households (16.4 years compared to 14.5 years).

In order to determine if drinking status among children was related to drinking status of mother, proportions of drinking children (controlling for gender) were computed for abstaining and drinking mothers of each household type. As shown in Table 6, percentages of drinking daughters were similar among abstaining mothers from couple-headed households (11.9 percent) and abstaining single heads of household (9.2 percent). A greater proportion of drinking daughters came from two-parent homes with a drinking mother (23.3 percent) than came from single-parent homes with a drinking mother (11.5 percent). Among single-headed families with abstaining mothers, 35.6 percent of the sons were found to drink, while 16.9 percent of the sons from dual-parent homes with abstaining mothers did so. Within single-parent families having a drinking mother, 20.7 percent of the sons drank. It

was found that 26.2 percent of the sons in two-parent homes with a drinking mother were drinkers also. Analyses indicate that these gender differences do not appear to be related to a variation in age distribution.

Discussion

As hypothesized and as found in other ethnic groups, there was greater use of alcohol among parents in non-intact families compared to those from intact families,[18,19] even when age, acculturation level, education, and income were taken into consideration. Acculturation did appear to play a role in drinking behaviors, since women drinkers of both single- and dual-headed households had higher levels of acculturation.

It has been suggested in other studies that more acculturated Mexican American women do have a tendency to have higher alcohol consumption.[13,14,20,21] Higher levels of acculturation do not explain why single female heads of household consume much more alcohol than their dual counterparts, however. Stressors of being a single female head of household need to be explored to ascertain what, if any, role they have in exacerbating drinking behaviors of single female heads of household.

It has been suggested by others[9] that when socioeconomic status is controlled, differences between single- and dual-headed households become non-significant. However, this study does not support such findings with respect to alcohol consumption patterns. In fact, we found that when such factors as income and education are controlled for, the differences between women of the two household types became more pronounced. Therefore, other elements must be contributing to the heavier alcohol consumption among single female heads of household. This conclusion is supported by the relatively small values of the adjusted R^2's for the ANCOVAs—suggesting that the independent variables explain little of the variance.

Since we have no data on initiation of alcohol use in conjunction with changes in marital status, it may be that marriage breakdown was due partially to the drinking behav-

TABLE 4—Analysis of Covariance of Children's (ages 12–18) Three Continuous Drinking Measures

	Children (ages 12–18)								
	Total Number Drinks			Total Number Days Drank			Drinks per Occasion		
	N	Crude	Adjusted*	N	Crude	Adjusted*	N	Crude	Adjusted*
Household Type									
Single	164	3.39	3.80	163	.69	.75	26**	4.02	3.59
Dual	490	2.56	2.42	490	.70	.68	70	4.01	4.17
Total (Grand mean)		2.77			.70			4.01	
Multiple R^2		.086			.105			.220	
		b	SE		b	SE		b	SE
Covariates									
Age		1.627	0.642		0.409	0.120		0.754	0.493
Education		−0.133	0.604		−0.071	0.111		−0.213	0.519
Gender		−3.061	1.147		−0.643	0.224		−1.856	0.735
Income		−0.009	0.060		0.018	0.015		−0.043	0.042
Acculturation		1.503	0.677		0.304	0.148		0.952	0.530
Household Type		−0.551	1.428		−0.076	0.333		0.591	0.978

*Adjusted for acculturation, age, sex, education, and combined family income.
**Statistic does not meet a minimum reliability standard (due to small cell size).
SOURCE: NCHS Hispanic Health and Nutrition Examination Survey

TABLE 5—Comparison of Continuous Drinking Measures for Children (ages 12–18) by Household Type

	Male Children				Female Children			
	Single Household		Dual Household		Single Household		Dual Household	
	N	Weighted Mean	N	Weighted Mean	N	Weighted Mean	N	Weighted Mean
Total								
Drinks	80	6.30	270	3.50	100	.75	275	1.48
S.E.		2.34		.82		.37		.37
Total Days								
Drank	80	1.18	270	.94	99	.24	274	.44
S.E.		.40		.19		.10		.09
Drinks per								
Occasion	20**	4.66	41**	4.73	8**	2.68	38**	2.67
S.E.		.65		.64		.71		.29

**Statistic does not meet a minimum reliability standard (due to small cell size).
SOURCE: NCHS Hispanic Health and Nutrition Examination Survey

TABLE 6—Weighted Percentages of Children Classified as Drinkers Controlling for Drinking Status of Mother

	Children Classified as Drinkers	
Status of Mothers	% Male	% Female
Single Household		
Abstainer	35.6	9.2
Drinker	20.7	11.5
Dual Household		
Abstainer	16.9	11.9
Drinker	26.2	23.3

SOURCE: NCHS Hispanic Health and Nutrition Examination Survey

iors of these females or that being single allowed these women more opportunity to consume alcohol.

The findings regarding female children are surprising. One would expect that daughters of single female heads of household would drink more than daughters of dual household heads, but we found the reverse to be the case. Additionally, sons of abstaining single mothers were more likely to be drinkers in comparison with both sons of abstaining dual mothers and sons of drinking mothers of either household type. Of course, within couple-headed families, children have a father who may act as a role model for their drinking behaviors. This could explain the findings regarding children if fathers were more likely than mothers to be drinkers.

In summary, these data suggest that single female heads of household drink significantly more than women in couple-headed families. This research indicates that single female heads of household are at increased risk for greater consumption of alcohol. While a lower percentage of mothers from couple-headed households consume alcohol, their numbers are greater. This information may be of assistance to those who implement preventive and intervention measures and treatment, especially since data indicate that alcohol-related mortality is particularly high among Mexican Americans.[22] Additionally, further research needs to be done to investigate the factors contributing to the drinking behaviors among these women, such as change in marital status and psychological stressors. In this way, treatment and intervention may become more effective.

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