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## ALCOHOL CONSUMPTION PATTERNS AND RELATED PROBLEMS: RESULTS OF A COUNTY SURVEY

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**ABSTRACT:** This study describes alcohol use in the general population of San Diego County. A random digit dial telephone survey was utilized to query 1656 adults about their drinking behavior. A quantity and frequency measure of alcohol consumption was used to classify drinking patterns. Alcohol problems were classified by acute problems and chronic problems. Males 18-25 years old reported the highest percentages of heavier drinking. Among females, this age group was also the most likely group to report heavier drinking. Overall, males and heavier drinkers were the most likely groups to report problems. However, lighter and moderate drinkers accounted for equal or greater percentages of each problem. Drinkers in the 18-25 year old age group were the group most likely to report the majority of all problems in both problem categories. Additionally, this group accounted for the majority of the reported acute problems.

Differences among the general population in alcohol consumption patterns can be useful in planning health promotion efforts targeting alcohol-related problems. However, large scale epidemiological research studies have varied in methodology, and the relationships among drinking patterns and problems are not established firmly.<sup>1,2</sup> This study describes the drinking patterns and problems of the adult population of a large California county, paying particular attention to gender and age differences.

The consumption patterns reported by Americans have been fairly consistent over the twenty year period from 1964 to 1984.<sup>3</sup> It is well established that men drink more than women.<sup>4,5</sup> Consumption data from the 1984 national survey analyzed by the Alcohol Research Group were as follows: Abstainers—26% males, 36% females; lighter drinkers—28% males, 41% females; moderate drinkers—27% males, 18% females; heavier drinkers—21% males, 5% females. Hilton<sup>5</sup> uti-

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lized a Q-F-V categorization scheme and also found that in comparison to men, women were more likely to be abstainers or lighter drinkers. Additionally, Hilton found men were more likely than women to be in "high max" categories (in which the drinker consumes a large number of drinks per occasion).

Alcohol consumption patterns also vary by age. Like their male counterparts, younger women have been found to be more likely than older women to report drinking frequently and heavily.<sup>6,7,8</sup> Similarly, Hilton<sup>3</sup> reports that among younger women there has been an increase in the proportion of heavier drinkers over the period from 1964 to 1984. Additionally, in the same analysis, Hilton reports increases in the proportion of young drinkers (among both sexes) reporting having drunk five or more drinks in a single setting over the same period.

Alcohol is associated with a wide range of problems including physiological problems, mental problems, casualties, and social problems.<sup>8</sup> These problems occur throughout the drinking population.<sup>9</sup> Clark and Midanik,<sup>10</sup> for instance, found that moderate drinkers who reported intoxication also reported higher percentages of alcohol problems than heavier drinkers who did not report intoxication. Consistent with this finding Wilsnak et al.<sup>6</sup> found intoxication was the best predictor of problems. Other studies have found that heavy drinkers are the most likely group to report alcohol-related problems, but because they comprise a small proportion of the total drinking population, moderate and lighter drinkers account for the majority of reports of these problems.<sup>11</sup> Heavier and problem drinkers, however, tend to minimize reports of their drinking and drinking-related problems<sup>12</sup> and may actually account for a larger percentage of these problems than indicated by self reports. Along these lines, Hilton<sup>3</sup> suggests heavy drinking is the primary risk factor for drinking problems.

Alcohol problems also vary by individual characteristics such as gender and age. It is clear that single young men are the highest risk group for alcohol-related problems.<sup>13</sup> Beyond this, differences in the prevalence and types of alcohol problems experienced by males and females are not well established. Although men and women may experience the same alcohol-related problems (e.g., family disruptions, driving while intoxicated etc.), women may be less exposed to certain problems<sup>14</sup>. For instance, women may be less apt to drive or work full-time than men thus may be at a lower risk for alcohol-related problems at work and DUI arrests.<sup>1</sup> Wilsnack et al.,<sup>6</sup> however, found the most frequent alcohol problem reported by women was driving while intoxicated.

Thus, the evidence to date suggests that, in general, men are

heavier and more problematic drinkers than women. Similarly, younger drinkers are heavier and more problematic drinkers than older drinkers. Beyond these few generalizations, the relationships among drinking patterns and alcohol-related problems are not well established.

## METHODS

The data were collected in an exploratory/descriptive survey targeting the general adult (18 years of age or older) population of San Diego County, CA. A random digit dial telephone survey was employed to conduct 1656 telephone interviews between July 1989 and January 1990. 3,787 households were contacted of which 2131 declined to respond to the survey, resulting in a refusal rate of 56.2%. Additionally, 40 respondents terminated the survey during the interview.

In terms of validity, Babbie<sup>15</sup> has suggested that telephone surveys may yield more valid results when accessing sensitive variables because there is no face-to-face contact. Additionally, Cahalan<sup>16</sup> has reported that the validity of self-reported alcohol problems is fairly high.

Fifty four trained interviewers, employed by a university-based social science research laboratory, conducted the interviews. A standardized method of interviewing was employed.

A minimum of 10% of the interviews were validated. A minimum of 1 interview per interviewer was validated after each interviewing session. No irregularities were reported. The mean interview length for completed interviews was 16.7 minutes (SD=7.6 range = 4 -73).

Items for the survey were taken from the 1979 and 1984 national surveys. New items were also developed by the Prevention Research Center (PRC) in Berkeley, California in collaboration with San Diego County Department of Health Services. Questions included consumption, problem, and demographic items.

A standard Q-F typology was utilized in this study. Consumption categories included: abstainer—an individual who had not drunk within the 12 months prior to being surveyed; light drinker—an individual who had consumed between 1 and 12 alcoholic drinks within the 30 day period prior to being surveyed; moderate drinker—an individual who had consumed between 13 and 52 alcoholic drinks in the 30 day period prior to being surveyed; heavier drinker—an individual who had consumed 53 or more alcoholic drinks in the 30 day period prior to being surveyed. A drink was assumed to be equal to ½ oz. of ethanol (i.e., 4-6 oz. glass of wine, 12 oz. beer, 1 shot of distilled spirits).

For this study alcohol problems were categorized by acute and chronic problems. Acute problems included drinking and driving, fighting, intoxication, and risky sexual behaviors. Chronic problems included problems with so-

cial life/relationships, health, home life and marriage, work and employment opportunities, and financial position.

## RESULTS

Of the total sample, frequencies for consumption patterns were as follows: abstainers comprised 30.9% of the sample, light drinkers represented 44.8%, moderate drinkers 17.6% and heavier drinkers represented the remaining 5.8% of the sample. Of the male respondents, 10.2% were heavier drinkers, 22.3% were moderate drinkers, 40.4% were lighter drinkers, and 27.1% were abstainers. In contrast, female consumption patterns were: heavier (1.8%), moderate (13.5%), lighter (49.7%), and abstainer (34.9%). Gender differences by consumption patterns were statistically significant ( $X^2 = 87.3$ ,  $df = 3$ ,  $p < .01$ ).

Overall, consumption patterns by age also were statistically significant ( $X^2 = 28.39$ ,  $df = 6$ ,  $p < .01$ ). Additionally, the relationship between Q-F consumption patterns and age was statistically significant for males ( $X^2 = 24.75$ ,  $df = 6$ ,  $p < .01$ ). Young males (18-25 years old) reported the highest percentage of heavier drinkers (14.0%) while females 35 years and older reported the highest percentage of abstinence (37.1%) and the lowest percentage of heavy drinking (1.5%).

Acute problems were analyzed in terms of 12 month prevalence, while chronic problems were analyzed in terms of 12 month (prior to survey) and life-time prevalence.

Of the acute problems, intoxication (22.2%) was the most reported problem among the 1,145 drinkers. Driving under the influence (DUI) was the second most prevalent problem reported among drinkers (10.2%). Fighting while drinking, and risky sexual behavior were not commonly reported problems (2.1% fighting; 4.6% risky sexual behavior).

Over one-fourth (28.8%) of the sample reported experiencing at least one of the life time (at least once prior to being surveyed) chronic problems. Of those reporting life time problems, 20% reported health problems, 17.0% reported problems with friendships/social life, 11.7% reported home life or marriage problems, 7.6% reported work-related problems, and 7.6% reported financial problems. Only 7.7% of those current drinkers reporting life time chronic problems reported experiencing chronic problems within the year prior to being surveyed. Chronic problems with friendships/social life were the most commonly reported of the 12 month problems (4.1%), followed by health problems (2.1%).

Differences of acute problems by gender were statistically significant for DUI ( $X^2=29.9$ ,  $df=1$ ,  $p<.01$ ), intoxication ( $X^2=46.7$ ,  $df=1$ ,  $p<.01$ ), and risky sexual behavior ( $X^2=9.2$ ,  $df=1$ ,  $p<.05$ ). Male drinkers reported each of these problems more often than females: DUI—males 20.3%, females 9.0%; intoxication—males 41.3%, females 22.5%; risky sex—males 8.9%, females 4.4%.

Similarly, differences in life time chronic problems by gender were statistically significant for each problem: Friendship/social life— $X^2=16.4$ ,  $df=1$ ,  $p<.01$ ; health— $X^2=13.1$ ,  $df=1$ ,  $p<.01$ ; home life/marriage— $X^2=12.1$ ,  $df=1$ ,  $p<.01$ ; work— $X^2=12.7$ ,  $df=1$ ,  $p<.01$ ; and finances— $X^2=10.7$ ,  $df=1$ ,  $p<.01$ . As with the acute problems, males were represented in greater percentages for each chronic problem: friendship/social life—males 22.0%, females 14.1%; health problems—males 25.5%, females 17.9% home life/marriage—males 15.3%, females 9.5%; work problems—males 10.5%, females 5.6%; financial problems—males 10.2%, females 5.8%.

Table 1 summarizes acute problems by consumption patterns

TABLE 1

Percentages and Numbers of Reported Acute Problems by Q-F Consumption Categories and Gender

Q-F Categories	Acute Problems							
	DUI <sup>a</sup>		Intoxication <sup>b</sup>		Fighting <sup>c</sup>		Risky Sex <sup>d</sup>	
	N	%	N	%	N	%	N	%
<i>Males</i>								
Lighter	34	10.7	85	26.6	10	3.1	16	5.0
Moderate	49	27.7	94	53.1	4	2.3	17	9.6
Heavier	33	41.7	57	71.3	5	6.3	17	21.5
Total	116		236		19		50	
<i>Females</i>								
Lighter	21	5.1	66	15.7	7	1.8	16	3.7
Moderate	20	17.8	43	37.2	2	1.6	6	5.5
Heavier	6	40.6	14	88.4	4	24.5	3	17.4
Total	47		123		13		25	

Notes. \*\*= $p<.01$  \*= $p<.05$

<sup>a</sup>Males— $X^2=44.9^{**}$ ,  $df=2$ ; Females— $X^2=29.1^{**}$ ,  $df=2$ .

<sup>b</sup>Males— $X^2=69.5^{**}$ ,  $df=2$ ; Females— $X^2=55.5^{**}$ ,  $df=2$ .

<sup>c</sup>Males—N.S.; Females—low cell totals preclude analysis.

<sup>d</sup>Males— $X^2=18.6^*$ ,  $df=2$ ; Females—N.S.

and gender. Overall, the heavier drinking group was the most likely group to report each of the acute problems, followed by the moderate and lighter drinking groups. However, because the heavy drinking group represented a relatively small proportion of the total sample, lighter and moderate drinkers accounted for the majority of these problems. Differences were statistically significant for each comparison of acute problems by consumption patterns. Additionally, among males, differences were statistically significant for each consumption pattern by problem comparison except fighting. Among females, differences were statistically significant for consumption patterns by DUI and intoxication.

Overall, and within sexes, younger drinkers (18-25 years of age) reported the most acute problems. This group also accounted for the majority of the reported acute problems with the exception of DUI. Among males reporting DUI, men 35 years and older accounted for 35.2% of the reports, while 18-25 year old males accounted for 33.6%. Within both sexes, 26-35 year old drinkers accounted for slightly higher percentages of DUI.

Table 2 summarizes life time chronic problems by consumption patterns and gender. Chi-Square values were significant for all analyses. Overall, heavier drinkers were the most likely group to report each of the chronic problems with the exception of financial problems. Abstainers were the most likely group to report this problem. Interestingly, abstainers were the second most likely group overall to report each of the other life time chronic problems, followed by moderate then lighter drinkers. Additionally, abstainers accounted for disproportionate percentages of home life/marriage problems (40.6%), work problems (50.4%), and financial problems (50.4%).

Among males, heavier drinkers were the most likely to report life time health problems and problems with friendships/social life, while abstainers were the most likely group to report the remaining chronic problems. Abstainers were the second most likely group to report problems with friendships/social life and health problems, while heavier drinkers were the most likely to report the remaining life time chronic problems. Consistent with the overall distribution of reported chronic problems, abstainers and lighter drinkers accounted for the majority of the problems among males. Additionally, because only 27.1% of the males sampled were abstainers, this group also accounted for disproportionate percentages of home life/marriage problems (45.3%), work problems (56.2%), and financial problems (53.1%).

Among females, heavier drinkers were the most likely group to report each of the life time chronic problems. Similar to males, female

TABLE 2

Percentages and Numbers of Reported Life Time Chronic Problems  
by Consumption Patterns and Gender

Q-F Consumption	Chronic Problems									
	Friend- ship/ Social Life <sup>a</sup>		Health <sup>b</sup>		Home Life Marriage <sup>c</sup>		Work <sup>d</sup>		Financial <sup>e</sup>	
	N	%	N	%	N	%	N	%	N	%
<i>Males</i>										
Abstainer	57	30.3	60	32.3	53	28.2	45	24.1	42	22.5
Lighter	55	17.2	66	20.6	29	9.1	17	5.3	20	6.3
Moderate	28	15.8	37	21.0	15	8.5	7	4.0	10	5.6
Heavier	28	34.6	31	38.8	20	25.0	11	13.6	7	8.6
Total	168		194		117		80		79	
<i>Females</i>										
Abstainers	29	11.9	45	18.8	25	10.4	18	7.0	20	8.4
Lighter	56	13.3	65	15.4	33	8.0	15	3.5	11	2.6
Moderate	19	16.4	21	18.7	10	8.7	7	6.3	7	6.3
Heavier	9	59.4	8	53.5	7	47.7	5	30.3	6	36.1
Total	113		139		75		45		44	

Notes \*\*= $p < .01$

<sup>a</sup>Males-  $X^2 = 22.4^{**}$ ,  $df = 3$ ; Females- $X^2 = 18.7^{**}$ ,  $df = 3$ .

<sup>b</sup>Males-  $X^2 = 17.1^{**}$ ,  $df = 3$ ; Females- $X^2 = 12.0^{**}$ ,  $df = 3$ .

<sup>c</sup>Males-  $X^2 = 43.3^{**}$ ,  $df = 3$ ; Females- $X^2 = 16.0^{**}$ ,  $df = 3$ .

<sup>d</sup>Males-  $X^2 = 49.9^{**}$ ,  $df = 3$ ; Females- $X^2 = 14.7^{**}$ ,  $df = 3$ .

<sup>e</sup>Males-  $X^2 = 25.0^{**}$ ,  $df = 3$ ; Females- $X^2 = 34.7^{**}$ ,  $df = 3$ .

abstainers were the second most likely group to report each of the life time chronic problems except friendship/social life. Likewise, female abstainers and lighter drinkers accounted for the majority of each of the reported life time chronic problems. However, unlike males, female abstainers, which represented 34.4% of the females sampled, only accounted for disproportionate percentages of reported problems related to work (40.0%) and finances (45.4%).

Similar to acute problems, 18-25 year old drinkers were the most likely group to report each of the chronic problems with the exception of home life and marriage. Respondents 35 years old and older were the most likely group to report problems in this category. However, unlike acute problems, older drinkers accounted for the majority of all chronic problems overall.

## DISCUSSION

The findings of this study are fairly consistent with those of similar studies: males reported heavier drinking and experiencing more alcohol-related problems more often than females; younger drinkers reported heavier drinking and experiencing more alcohol-related problems than older drinkers; heavier drinkers reported experiencing more problems than moderate and lighter drinkers.<sup>5,6,7,17</sup>

Also consistent with other research<sup>11</sup> that found that most alcohol problems are not caused by addicted or dependent drinkers, this study found moderate drinkers and lighter drinkers accounted for equal or greater percentages of the reported problems in comparison to heavy drinkers. However, consistent with Hilton's<sup>3</sup> suggestion that heavy drinking is the greatest risk factor for problems, in this study, heavier drinkers were more likely to report alcohol-related problems than moderate or lighter drinkers.

Interestingly, abstainers reported the highest percentages of financial problems and were the second most likely group (behind heavy drinkers) to report each of the other life time chronic problems. Additionally, abstainers and lighter drinkers accounted for the majority of reported life time chronic problems. This finding may indicate that problematic drinking, particularly when financial, resulted in decreased consumption or abstinence among many individuals.

Such findings have implications for the development of health promotion campaigns. For instance, based on the above findings health promotion efforts with the goal of reducing the aggregate number of alcohol-related problems would target all drinkers rather than focusing exclusively on heavier drinkers. Conversely, campaigns with the goal of impacting individual risk would focus on heavier drinkers.

Telephone surveys can be useful in describing drinking patterns and their related problems among drinkers in specific geographic locations. The results of such studies may prove to be especially useful when utilized by health promotion planners and prevention strategists to guide interventions aimed at reducing alcohol-related problems.

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