

**GENDER AND ALCOHOL USE: THE ROLES OF SOCIAL SUPPORT,
CHRONIC ILLNESS, AND PSYCHOLOGICAL WELL-BEING**

by

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ABSTRACT

Objectives: Men and women differ in their use of alcohol, in reported rates of chronic illnesses and psychological symptoms, and in the social support they receive. Research suggests that the latter three factors affect patterns of alcohol consumption. The purpose of this paper is to assess how these factors, taken together, predict alcohol use among men and women. **Methods:** Study subjects were 3,074 male and 3,947 female (7,021 total) randomly-selected Health Maintenance Organization (HMO) members who responded to a mail survey in 1990. The survey included the SF-36 Health Survey, social support/integration measures, the BSI eight-item depression screening instrument, self-reports of chronic illnesses, and frequency and quantity of alcohol consumption. **Results:** Hierarchical multiple regression analyses indicate social support predicts alcohol consumption similarly for both men and women, yet some demographic, physical health/functioning, and psychological well-being measures played different predictive roles. Men with better health/functioning drank *more*, while women with better psychological well-being drank *less*. **Conclusions:** Poor psychological well-being is a modifiable risk factor for increased alcohol use among women; practitioners should be alert for greater consumption among men with few functional limitations and good health.

INTRODUCTION

Health care plans and providers are increasingly aware that they must adequately identify, treat, and manage the care of people who have alcohol problems and comorbid conditions such as depression and chronic illnesses. To identify such patients and address their problems appropriately, however, we need to understand how these comorbid conditions interact, as well as how patient characteristics and social situations influence such conditions and their attendant outcomes. Previous research efforts suggest that gender, depression, chronic illnesses, and social support all individually influence alcohol consumption, and that gender also influences the prevalence and manifestations of the latter three factors. Until recently, few models have addressed these complex relationships separately for men and women, even though the literature surrounding the effects of gender on alcohol consumption suggests that models of this type are needed.^{1,2} In this paper, I use a survey of a large, random sample of HMO members to test separate gender-based models of the ways depression, health and functional status, chronic illness, and social support predict alcohol consumption, comparing these models to a single combined-gender model and to a subsample of male non-to-light drinkers whose drinking habits correspond most closely to those of women in the sample.

Gender and Alcohol

Evidence from work in various domains indicates that gender is one of the most important individual characteristics influencing use of alcohol. Recent efforts to understand how gender affects alcohol consumption have established some clear differences:³ Women drink less frequently than men, consume less alcohol when they do drink,⁴ even after adjusting for total body water,⁵ and drink with different people, under

different circumstances, and at different times of the day when compared to men.⁵

Women with drinking problems have fewer—but more interconnected—problems.⁴ They are also less likely than men to receive treatment for their alcohol problems,^{4,6} may delay that treatment,⁷ and are more likely to be treated in psychiatric settings⁸ that may not adequately address their drinking problems.⁷

In addition to differences directly related to alcohol use and alcohol problems, gender also influences many of the other factors known to affect patterns of alcohol consumption. These include employment status, marital status, income and socioeconomic status,⁹⁻¹² self-reported chronic conditions and health status,^{13,14} number and types of psychiatric comorbidity,^{15,16} number and types of chronic illness,¹⁴ and functional status.^{13,14}

Interestingly, the fact that men generally drink more than women obscures our understanding of these differences to some degree. It is plausible that differences in alcohol-related outcomes result from differences in consumption or consumption per body weight among the heaviest drinkers of both sexes, and that the factors affecting the consumption of the heaviest drinkers differ from those of lighter or non-drinkers. To date, the author knows of no one who has examined a group of men whose consumption is similar to that of women to ascertain whether the gender differences we see hold for male non-to-light drinkers as well as for heavier drinkers. Such analyses should assess the underlying predictors of alcohol use in both these groups, and ascertain whether the factors underlying non-to-light drinking men's consumption are closer to those of women or to those of heavier-drinking men.

Gender, Alcohol, and Chronic Medical Conditions

In recent years, increasing attention has been paid to medical and psychological conditions common among people who drink alcohol, especially those who have drinking-related problems. Concerns about medical comorbidities in combination with alcohol use and abuse have come to the fore for various reasons—some because of the potentially positive effects of moderate alcohol use (e.g., in coronary artery disease),¹⁷ most others because of the dangers associated with heavy consumption of alcohol or the potential adverse outcomes of even moderate alcohol use in combination with some prescription medications.¹⁸⁻²¹ The majority of these studies have focused on the role of alcohol in causing or exacerbating specific diseases or constellations of related diseases, or people's use of alcohol in response to, or as a coping mechanism for, difficulties associated with particular chronic conditions. In the context of alcohol use, the physical conditions studied to date include heart disease and hypertension, arthritis, chronic pain, asthma, cancer, and dementia, in addition to those illnesses that are caused by alcohol abuse (e.g., liver disease). Despite this attention to the roles played by alcohol in chronic illnesses, the author is unaware of studies that examine the joint effects of multiple chronic conditions on alcohol consumption, or that investigate gender differences in these relationships. This paper is an attempt to explore these relationships.

Gender, Alcohol, and Psychological Well-Being

Researchers have increasingly studied the relationships between alcohol consumption, misuse of or dependence on alcohol, and various psychiatric comorbidities. These investigators have explored gender differences far more than have those studying the relationships among alcohol, chronic physical conditions, and gender. Among other

topics, researchers have examined the relationship between alcohol use and (a) depression, (b) suicide (completed, attempts, and thoughts), (c) violent behavior, (d) eating disorders, (e) antisocial personality disorder, and (f) anxiety (see Hesselbrock & Hesselbrock¹⁶ for a review).

Perhaps the most important (and most studied) of these comorbid conditions is depression, since depression is common in the general population,²² especially among women, and among those who abuse or are dependent on alcohol.²¹ Additionally, women are more likely to have comorbid depression,¹⁵ with the onset of their depression likely to be prior to their alcohol problems.²⁴ Conversely, for men, comorbid depression may be a sequela to drinking-related difficulties²⁵ although the evidence for this assertion is inconsistent (cf. Moscato²⁴). In addition, depressed women with alcohol problems have more severe depressive symptoms than do depressed men with similar problems.²⁶ Depression may also increase the probability of adverse outcomes related to alcohol misuse and abuse, including suicide.¹⁵ These latter findings have produced increased concerns about identifying and adequately treating individuals with both mental health and substance-abuse problems. Lastly, evidence suggests that depression and chronic illnesses can interact: Chronic illness can lead to increases in depressive symptomatology and depressive symptoms can lead to increases in illness.²⁷ Such findings suggest that spirals of comorbid depression and chronic illness could produce increased alcohol consumption, especially among women.

Gender, Social Support, Well-being, and Alcohol Use

There are important gender differences in the structure of men's and women's social networks, and in the functional support provided by those networks.^{28,29} Although

men's networks tend to be larger and more diffuse, they are less intense than women's networks, and women's networks are more likely to include confidants than are men's. In addition, women's networks tend to provide more types of support than men's, and women generally receive, and make use of, more of this network-provided support. Lastly, both men and women tend to seek out support from women, with spouses being the most important source of female support for married men (see Shumaker & Hill²⁹ for a review).

Recently, researchers have been exploring the roles played by social support in depression, alcohol use, and chronic disease, as well as among depressed people with alcohol problems and in corresponding treatment outcomes for all these conditions. In general, lower levels of social support predict more depressive symptoms and depression relapses, more alcohol use and problems, more serious course of chronic illnesses, and worse treatment outcomes.³⁰⁻⁴⁰

I believe that the complexity of these relationships calls for comprehensive modeling strategies that include measures of the demographic, social, physical, and psychological factors that appear to contribute to alcohol consumption. I endeavor to create such models as part of this paper.

METHODS

Study Site

In 1990-91, at the time of data collection, Kaiser Permanente Northwest Region (KPNW) was the third largest of 12 semi-autonomous regions of Kaiser Permanente, a federally qualified HMO that provides comprehensive outpatient and inpatient care to its members. At that time, the enrolled population was approximately 375,000 members in the metropolitan area that comprises Portland, Oregon and Vancouver, Washington. In general, KPNW members resemble the local area population in age distribution as well as in health status and major sociodemographic traits.^{41,42}

Participants

Study subjects were 3,074 male and 3,945 female (7,019 total) HMO members who responded to a mail survey in 1990. Surveys were sent to subscribers and (if married) spouses of 8,518 randomly-selected member households. At least one questionnaire was returned from 4,970 of those households, for a household response rate of 58.3%. At the individual level, the response rate was 56.3%. Respondents' ages ranged from 17 to 98 years ($M = 50.5$, $SD = 16.6$). About 92% of the sample identified themselves as White, 1.9% as Black or African American, 1.8% as of Asian or Pacific Islander descent, 0.7% as Aleut, Eskimo, or American Indian, and 1.4% as "other." Among all groups, 1.8% described themselves as of Hispanic origin.

In order to further compare women to men whose drinking patterns are similar to those of women, I created a subsample of respondents—males who drank ≤ 15 drinks/month. This strategy produced a group that contained 2,416 men whose ages ranged from 18 to 93, and whose mean age was 51.7 ($SD = 16.5$), older by about one year

when compared to the full sample. I chose the ≤ 15 drinks/month cut-off because over 90% of women reported drinking 15 or fewer drinks/month, therefore creating a group of men whose drinking habits most closely resembled those of women.

Questionnaire

In addition to questions about demographic information, the survey included the SF-36 Health Survey,⁴³ four social support/integration measures, the BSI eight-item depression-screening instrument,⁴⁴ self-reports of past diagnoses of important chronic illnesses, and frequency and quantity of alcohol consumption. Specific descriptions follow, and percentages for specific measures appear in Table 1.

Respondent Characteristics

Age and Age². I obtained respondents' ages, in years, from administrative data systems, and computed the age² variable from these data, the latter to account for the curvilinear relationship between alcohol consumption and age.

Gender. Gender is represented in the models as female = 1 and male = 2.

Ethnicity. Ethnicity is coded as a binary variable with non-Hispanic White ethnicity = 1. Although this measure is problematic because it collapses individuals from many different ethnicities into one group, there was not adequate representation in the sample to include separate subgroups.

Self-reported Social Class. Respondents reported their social class on a five-point scale that included the following levels: lower (coded 1), working, middle, upper-middle, and upper class (coded 5).

Income. Respondents reported their yearly income on a nine-point categorical scale, ranging from under \$5000/year (coded 1) to \$70,000 or more/year (coded 9).

Table 1. Percentage distribution of survey participants for selected demographic characteristics and survey responses.*

	Men (n = 3,074)	Women (n = 3,945)	Total (n = 7,019)
Social Class			
lower	1.2	2.6	2.0
working	32.9	31.4	32.1
middle	49.5	49.0	49.2
upper-middle	12.0	11.7	11.8
upper	0.5	0.5	0.5
Income			
Under \$5,000	0.8	2.4	1.7
5,000-9,999	3.0	7.4	5.5
10,000-19,999	15.7	18.5	17.3
20,000-29,999	19.9	19.0	19.4
30,000-39,999	19.6	16.5	17.8
40,000-49,999	13.7	12.2	12.9
50,000-59,999	8.9	7.1	7.9
60,000-69,999	4.4	3.4	3.8
70,000 or more	5.4	4.2	4.7
Married	78.6	67.4	73.3
Employed	62.3	49.8	59.0
Frequency of Contact with Friends and Relatives			
never	0.4	0.2	0.3
not frequently	18.2	12.9	15.2
somewhat frequently	31.9	26.2	28.7
frequently	35.2	35.7	35.5
very frequently	12.1	23.6	18.6
Amount of social and emotional support received from friends and relatives			
none	2.3	1.2	1.7
not very much	14.1	7.5	10.4
a fair amount	43.1	32.8	37.3
a great amount	27.1	34.1	31.0
a very great amount	10.4	22.5	17.2
Frequency of attendance at religious services			
never	38.8	29.8	33.8
not very often	20.9	19.9	20.4
occasionally	12.6	16.2	14.6
very often	25.7	32.2	29.3
Participation in non-religious clubs or organizations			
no participation	56.6	52.5	54.3
moderate participation	32.7	34.9	33.9
high participation	5.4	6.8	6.2
very high participation	2.9	3.4	3.2

* Note: Percentages do not add to 100 as a result of missing values.

Marital Status. Marital status is a binary variable coded as currently married = 1.

Employment Status. Employment is coded as a binary variable with employed at the time of the survey = 1.

Alcohol Consumption in Drinks/Month. The questionnaire contained two alcohol-related questions: (a) How often do you have a drink containing alcohol? (never [coded 0], once a month or less [coded 1], two to four times a month [coded 3], two to three times a week [coded 10], four or more times a week [coded 16]), and (b) If you ever drink alcohol: On days when you have a drink, how many drinks do you typically consume? (one or two drinks [coded 1.5], three or four [coded 3.5], five or six [coded 5.5], seven to nine [coded 8], 10 or more [coded 11]). I then calculated the drinks/month variable using the reported number of drinking sittings/month multiplied by the number of drinks typically consumed in one sitting, log-transformed (after adding 1 to each value) to improve the distribution. Of the women in the sample, 37.6% were non-drinkers; among drinkers the average number of drinks per month was 8.7($SD = 13.0$), and consumption ranged from 1.5 to 128 drinks. For men, 30.7% were non-drinkers; among drinkers, the average number of drinks per month was 18.0($SD = 26.0$), and consumption ranged from 1.5 to 176 drinks.

Social Support/Integration Variables. I included four social support/integration measures in the analyses, asking respondents how frequently they had contact with friends and relatives (never [coded 1], not very frequently, somewhat frequently, frequently, very frequently [coded 5]), how much emotional support they received from friends and relatives (none [coded 1], not very much, a fair amount, a great amount, and a very great amount [coded 5]), how frequently they attended religious services (never

[coded 1], not very often, occasionally, and very often [coded 4]), and how frequently they participated in non-religious clubs such as the PTA, civic groups, fraternal groups, etc. (no participation [coded 1], moderate participation, high participation, and very high participation [coded 4]).

Health, Psychological Well-being, and Functioning. The primary measures of physical health, psychological well-being, and functioning come from the SF-36.⁴³ This instrument was designed as a general indicator of health status for use in population-based surveys and health policy evaluations. It can be used to measure a wide range of conditions and severities, and is particularly useful for assessing the health status of individuals with multiple health conditions, and for comparing the health of different populations⁴⁵ (p. 446). I included the following subscales in the analyses: General Health ($M = 68.74$, $SD = 20.47$), Physical Functioning ($M = 83.59$, $SD = 22.78$), Role Limitations Due to Physical Health ($M = 76.39$, $SD = 37.72$), Role Limitations Due to Emotional Problems ($M = 81.53$, $SD = 33.91$), Vitality (Energy and Fatigue) ($M = 83.38$, $SD = 32.60$), Social Functioning ($M = 55.78$, $SD = 17.38$), Bodily Pain ($M = 75.92$, $SD = 23.55$), and Emotional Well-Being ($M = 76.18$, $SD = 16.70$).⁴³ The Emotional Well-Being scale is also known as the Mental Health Index-5 (MHI-5), and measures four mental-health dimensions—anxiety, depression, loss of behavioral/emotional control, and psychological well-being.⁴⁶ Lastly, I included the item measuring changes in health status compared to one year earlier (much better now than one year ago [coded 100], somewhat better now than one year ago [coded 75], about the same [coded 50], somewhat worse now than one year ago [coded 25], much worse now than one year ago [coded 0]). The mean for this variable was 53.52 ($SD = 17.62$).

In addition, I also included the BSI-8 Depression Screen—a brief, eight-item scale originally developed by the RAND Corporation for use in the Medical Outcomes Study. It contains several items describing mood and neurovegetative symptoms, as well as items that screen for dysthymia by asking about duration of depressed mood. Burnam et al.⁴⁴ studied the value of this screener in predicting major depression and dysthymia in primary care, general, and mental health populations, and found it to have good sensitivity, specificity, and positive predictive value for recent major depression and dysthymia. Although this measure is related to the MHI-5, the shared variance is moderate ($r^2 = .29$). The mean score on the BSI-8 was .059, ($SD = .165$)

As measures of chronic illnesses, respondents reported whether or not their doctor had ever told them they had one or more of the following diagnoses: (a) asthma (7.0%), (b) diabetes or high blood sugar disease (5.7%), (c) arthritis (21.4%), (d) chronic bronchitis (4.3%), (e) hypertension or high blood pressure (21.5%), (f) emphysema or COPD (2.1%), (g) depression (9.3%), (h) myocardial infarction or heart attack (3.3), (i) cerebrovascular disease or stroke (1.9%), (j) heart disease or coronary artery disease (5.0%), and/or (k) rheumatoid arthritis (3.2%).

Analysis

I explore several key questions in this paper: (a) How do multiple chronic illnesses, psychological well-being, and social support predict alcohol consumption? (b) Are the factors that predict alcohol consumption related to that consumption in the same ways for men and women, or do we need to create separate models by gender? and (c) Do the models of alcohol consumption for men whose drinking patterns are similar to those of women appear closer to those of women or to those of men more generally?

To address these questions, I computed four series of hierarchical multiple linear regression analyses predicting alcohol consumption among each of the following groups: the full combined-gender sample, men only, women only, and male non-to-light drinkers, entering the variables by block in the following order:

- Block I, stepwise selection of demographic factors (gender [for full sample only], age, age², employment status, self-reported social class, income, and ethnicity)
- Block II, stepwise selection of social support/integration measures (marital status and the four social support/integration variables)
- Block III, stepwise selection of physical health and psychological well-being factors (SF-36 subscales, BSI-8, and self-reports of past diagnoses of chronic conditions).

RESULTS

Similarities across Gender

The results of hierarchical linear regression analyses predicting alcohol consumption, by group, appear in Table 2. As shown by differences in the signs among the age and age² variables, there is a strong curvilinear relationship between age and alcohol consumption, with consumption higher among younger respondents and lower among older participants. This effect does not differ by gender, with the exception that male non-to-light drinkers drink consistently across different ages except for those who are the oldest, and who, like the other groups, drink less. Higher income also predicts increased drinking among both men and women, as does non-Hispanic White ethnicity. Lastly, men drank more, on average, than women, consistent with other findings.

Among the social support variables, men and women who attended religious services more frequently drank less, as did those who were married. Conversely, respondents who got together more frequently with relatives and friends drank more (with the exception of male non-to-light drinkers), as did those who participated more in non-religious clubs. Among men, this latter result appears to reflect greater drinking among male non-to-light drinkers who attend clubs. Among the health-related variables, women and male non-to-light drinkers with better physical functioning drank more, men and women with diagnoses of diabetes drank less, while those with a diagnosis of hypertension drank more. The only exception to this latter result was among the male non-to-light drinkers, for whom there was no relationship. There was also a trend, in the combined-gender model alone, for those with lower pain levels to drink less. Finally,

Table 2. Results of hierarchical linear regression analyses predicting alcohol consumption for men and women jointly, men only, women only, and male non-to-light drinkers.*

Block	Variable	Men & Women		Men Alone		Women Alone		Male Non-to-light Drinkers	
		Beta		Beta		Beta		Beta	
1	Male gender	.167***		n/a		n/a		n/a	
	Age	.348***		.353**		.342***			
	Age ²	-.435***		-.502***		-.416***			
	Income	.088***		.103***		.086***			
	Self-reported social class	.040**				.069***			
2	Non-Hispanic White ethnicity	.042***		.034*		.054***		.033+	
	Employed	.009 <i>ns</i>		-.107***		.069***		-.096***	
	Married	-.067***		-.062***		-.054**		-.060**	
	How often attend religious services	-.249***		-.285***		-.217***		-.200***	
	How often get together with friends/relatives	.041***		.040*		.038*			
	How often participate in clubs	.035**		.030+		.039*		.058**	
	Good general health	.030*						.051*	
	Good physical functioning	.070***				.109***		.056*	
	Good emotional well-being	-.040**				-.053*			
	Few role limits due to physical health	.040**		.056**					
3	Few role limits due to emotional problems								
	Good energy & little fatigue								
	Low pain	-.026+							
	Better health compared to 1 year earlier	-.023*		-.041*				-.047*	
	Past diabetes diagnosis	-.066***		-.075***		-.064***		-.050*	
	Past hypertension diagnosis	.036**		.042*		.030+			
	Past depression diagnosis	-.028*				-.045**			
	Past arthritis diagnosis	.029*				.038*			
	Past rheumatoid arthritis diagnosis							.033+	
	Adjusted R ²		.16		.13		.14		.09

* Note. + = $p < .10$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$ there were no inconsistencies across gender for any of the psychological well-being predictors.

Differences across Gender

There were two important gender differences among the demographic predictor variables. In the combined-gender sample, higher self-reported social class predicted greater alcohol consumption. This result, however, appears to be driven by the women in the sample, for the association is not present in either of the men-only models.

Additionally, the relationship between consumption and employment status differed for men and women: Women who were employed drank more, while employed men drank less than those who were not employed. Interestingly, the result of this difference was that no significant employment effect was present in the combined-gender model, and these differential results would have been missed were it not for the gender-specific models.

Among the measures of health and physical functioning, we found other interesting gender differences. The combined-gender model suggests that good general health, good physical functioning, and few role limits due to physical health are associated with greater alcohol consumption. However, the gender-specific models suggest that this effect is driven primarily by men. A similar pattern can be seen for having better health compared to the prior year: The combined-gender model suggests that better health is associated with lower levels of alcohol consumption, while the gender-specific models clarify that this is true primarily among men. Similarly, the combined-gender model suggests that a prior diagnosis of depression is associated with less alcohol consumption, while an arthritis diagnosis predicts additional drinking; yet, the separate models show that this effect is driven by the women in the sample.

Among the psychological well-being predictors, we also found interesting gender differences. The combined-gender model suggests that good emotional well-being is associated with lower alcohol consumption, yet the separate models show that the women in the sample account for this difference. Other gender differences include a finding that women with good energy and low fatigue drank more than those with poorer energy and greater fatigue, and a trend toward women with few limits due to emotional problems drinking less. None of the psychological well-being measures was associated with men's alcohol consumption.

DISCUSSION

These results suggest several important gender similarities and differences among the factors that predict alcohol consumption. First, I found that the social support/integration measures predicted consumption in similar ways for both men and women, as did marital status, the latter finding consistent with previous research. Getting together with friends more frequently and participating in clubs were associated with greater alcohol use, while being married and frequent attendance at religious services predicted lower consumption levels. In fact, frequency of attending religious services was second only to the age variables in its predictive ability in the models. Interestingly, the amount of emotional support received from friends and relatives did not predict consumption, implying that emotional support does not substitute for alcohol use as a coping mechanism. Instead, the results suggest that spending time with friends and in club-like settings constitute circumstances where alcohol is available and where drinking is encouraged, and that the situation, rather than unmet emotional support needs, drives drinking behavior.

There were also interesting gender differences among the physical health and psychological well-being predictors of alcohol consumption. Men, primarily non-to-light drinkers who had good physical health status and physical functioning, drank more alcohol, while psychological well-being factors did not predict their consumption levels. Contrary to these findings, most measures of physical functioning did not predict women's consumption although emotional well-being measures did—but in the *opposite* way of what might be expected if one extrapolated from the results of the models of men in the sample. While men with better health and fewer functional limitations drank *more*,

women with better emotional health drank *less*. An exception to this pattern is that women with good energy and low fatigue (a measure that is conceptually related to both physical and mental health and functioning) drank more. Additionally, it was among women that a prior physical problem (arthritis) predicted increased drinking—again contrary to the pattern that appears among the men in the sample. Although the positive association between alcohol consumption and hypertension among men appears to contradict these patterns, I believe that this result reflects the known causal relationship between these two variables. The fact that the association is not present among the male non-to-light drinkers and was a trend only among the women in the sample (who drink less) reinforces this interpretation.

I was surprised that some of the measures were not predictive in any the models. These included many of the chronic conditions--asthma, chronic bronchitis, emphysema or chronic obstructive pulmonary disease, myocardial infarction, cerebrovascular disease or stroke, heart disease, and rheumatoid arthritis. Because the SF-36 measures were predictive of consumption, I wondered if the variation in health within groups with these different diagnoses, and measured by the SF-36, might be obscuring the effects of these specific conditions. To further explore this hypothesis, I examined data from respondents who reported having received these diagnoses, by diagnostic group, and ran a series of bivariate correlations between the SF-36 measures and alcohol consumption. With the exception of the group with rheumatoid arthritis, where there was no relationship for the full sample, I found weak correlations ($r = \pm .15$) between alcohol consumption and the SF-36 general health, physical functioning, and role limitations due to physical health measures, with those reporting better health consuming more alcohol. This suggests that

people with a variety of chronic conditions slightly modify their alcohol use in response to the severity of their health status. This pattern was also true when I computed separate gender-based correlations, with one exception: men with rheumatoid arthritis and good scores on the SF-36 health measures drank less, while women with the same diagnosis tended to drink more when their SF-36 health measures were higher, the latter being consistent with the finding in the full model that women with arthritis drank more. In general, the results of these bivariate analyses produce a gender-based pattern that is different from what I found in analyses of the full sample, and may suggest that women with such conditions have lifestyles and health behavior patterns that are similar to those of men and which contribute to the etiology of some of these conditions.

Another measure that was not predictive in the model was the BSI-8 depression screener. The lack of predictive ability of the BSI-8, when the MHI-5 *was* predictive, suggests that a wider range of emotional difficulties, including but not limited to depression, may be more important to our understanding of alcohol consumption than depression alone, particularly among women. Lastly, the fact that women with prior diagnoses of depression drank less suggests that when emotional problems are recognized, risk of increased alcohol consumption can be reduced.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There are some limitations that should be considered in evaluating the results presented in this paper. First, the data included surveys from some married couples which, because their responses were associated ($r^2 = .15$), could result in restricted variance within the full sample, possibly attenuating the relationships presented here. Second, the data I used are from a light-drinking population, and heavy drinkers are

underrepresented. Whether or not these results would hold true among a group of heavy drinkers is unknown, and future efforts might consider a replication in such a population. It is possible that the social support, psychological well-being, and health measures might show stronger, and perhaps different, associations than presented here, and such a study would have the potential to identify relationships that might be useful in the treatment of people with drinking problems.

CONCLUSIONS

Social support and social integration appear to function in similar ways for men and women with respect to alcohol consumption, while other factors—including demographic characteristics, physical functioning, and psychological well-being measures—seem to predict alcohol consumption in quite different ways, depending on gender. In particular, the importance of psychological well-being among women in predicting alcohol use, and that of physical health among men, deserve additional attention. Poor psychological well-being appears to be an important, modifiable, risk factor for increased alcohol use among women.

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