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Episodic Heavy Drinking and 20-Year Total Mortality Among Late-Life Moderate Drinkers

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Abstract

Background—Analyses of moderate drinking have focused overwhelmingly on average consumption, which masks diverse underlying drinking patterns. This study examined the association between episodic heavy drinking and total mortality among moderate-drinking older adults.

Methods—At baseline, the sample was comprised of 446 adults aged 55 to 65: 74 moderate drinkers who engaged in episodic heavy drinking and 372 regular moderate drinkers. The database at baseline also included a broad set of sociodemographic, behavioral, and health status covariates. Death across a 20-year follow-up period was confirmed primarily by death certificate.

Results—In multiple logistic regression analyses, after adjusting for all covariates, as well as overall alcohol consumption, moderate drinkers who engaged in episodic heavy drinking had more than two times higher odds of 20-year mortality in comparison to regular moderate drinkers.

Conclusions—Among older moderate drinkers, those who engage in episodic heavy drinking show significantly increased total mortality risk compared to regular moderate drinkers. Episodic heavy drinking—even when average consumption remains moderate—is a significant public health concern.

Keywords

Alcohol consumption; episodic heavy drinking; mortality; aging

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Introduction

Increasing evidence points to an association between moderate alcohol consumption and reduced total mortality (Di Castelnuovo et al., 2006). However, analyses of moderate drinking have focused overwhelmingly on average consumption, which masks diverse underlying drinking patterns. For example, among individuals whose average consumption is moderate, drinking may vary from a regular pattern of consumption to one that includes weekend heavy episodic or binge drinking. In fact, almost half of all binge drinking episodes among U.S. adults occur among moderate drinkers (Naimi et al., 2003). Episodes of heavy drinking concentrate alcohol's toxicity and are linked to mortality through diverse disease and behavioral pathways (Rehm et al., 2010). Thus, a central question concerns the effect of episodic heavy drinking on the association between alcohol and longevity among individuals who are on average moderate drinkers.

Total mortality is the best single indicator for the overall health consequences of alcohol consumption because it reflects both potential beneficial and detrimental mechanisms of alcohol on health (Costanzo et al., 2010; Gmel et al., 2003). However, only a few studies have focused on episodic heavy drinking and total mortality. Mukamal et al. (2005) followed more than 1900 individuals for a median of almost four years and found that the total mortality advantage associated with light drinking (an average of up to 1 drink/day) was erased by episodes of binge drinking of 3 or more drinks in 1–2 hours. Although the sample was comprised of late-middle-aged U.S. adults, it was restricted to patients initially hospitalized after acute myocardial infarction.

Two other relevant studies were restricted to Finnish men. These studies did not specifically address moderate drinking, but reported effects that controlled for overall alcohol consumption. Kauhanen et al. (1997) followed a sample of over 1500 middle-aged, male beer-drinkers for almost 8-years. Men who typically consumed 6 or more bottles of beer per drinking occasion had substantially increased total mortality compared to men who typically consumed less than 3 bottles of beer per drinking occasion. Laatikainen et al. (2003) studied a mixed-age sample of over 5000 men for up to 10 years. Men whose consumption included a heavy drinking pattern (defined as 6 or more drinks per drinking occasion), when compared to those without such a pattern showed significantly increased total mortality. However, these studies did not apply NIAAA (Gunzerath et al., 2004; NIAAA, 2007) definitions of moderate drinking or binge drinking, did not focus on a broad sample of older drinkers, and did not include both women and men.

Present Study

In sum, research is needed to evaluate the relationship between drinking pattern and health in the context of average moderate consumption (Rehm et al., 2010; Roerecke & Rehm, 2012). Moreover, previous research on drinking pattern and health has not focused explicitly on older adults. This is important because the apparent beneficial mortality effect of moderate alcohol consumption is limited primarily to those who face the greatest risk of coronary heart disease, namely older individuals (Gmel et al., 2003; Rehm et al., 2009).

To address these issues, the present study investigated the association between episodic heavy drinking and total mortality among moderate drinkers in a sample of adults aged 55 to 65 at baseline. Specifically, we examined this question among 446 adults: 74 moderate drinkers who engaged in episodic heavy drinking at baseline and 372 regular moderate drinkers at baseline. Total mortality was indexed across a 20-year follow-up. We predicted that moderate drinkers who were episodic heavy drinkers in comparison to regular moderate drinkers would show increased 20-year total mortality risk.

Materials and Methods

Sample Selection and Characteristics

The present study is part of an overall project that has examined late-life patterns of alcohol consumption and drinking problems (Moos et al., 2004, 2009, 2010; Schutte et al., 2006) and stress and coping processes (Holahan et al., 1997, 2005) among late-middle-aged and older adults. The overall project used an initial screening survey, separate from the baseline questionnaire, to obtain information on drinking behavior and health from men and women between the ages of 55 and 65 who had recent outpatient contact with one of two large medical centers in the previous three years. One was a public facility and the other was a private facility. Participants were not recruited from alcohol treatment programs. Because a key goal of the overall project was to examine a wide range of drinking behaviors, participants were selected at screening who: (a) had consumed alcohol at least once a week during the last six months but had never had a drinking problem, or (b) had current (in the last year) or past drinking problems. For additional information on the sample selection procedures, see Brennan and Moos, 1990, Moos et al., 1991, and Mertens et al., 1996.

Of 2,318 potential respondents, we were able to reach 2,217 individuals (96%); of these, 2,125 (96%) agreed to participate in the project. Of those who agreed to participate, 1,884 individuals (89%) provided complete data and formed the baseline sample of the overall project. At baseline, the overall sample was generally comparable to other community samples, such as those drawn from the National Health Survey (Vital and Health Statistics, 1981, 1985) with respect to health characteristics, including the proportion of individuals with high blood pressure, arthritis, and recent medical hospitalization (Brennan & Moos, 1990). Notwithstanding these similarities, the specific drinking groups examined in this study may differ from comparable groups of individuals in other community samples. The study was approved by the Stanford University Medical School Panel on Human Subjects; after the project was fully explained, participants provided signed informed consent.

The present study focused on 446 participants from the overall project whose baseline assessment of drinking behavior indicated that during the last month they were moderate drinkers. The final sample for this study included 112 (25%) women and 334 (75%) men. At baseline, participants in the present study were an average of 62 (*SD* = 3.16) years of age, predominantly Caucasian (90%), and 79% were married.

Measures

The database at baseline included information on alcohol consumption; drinking problems; and a broad set of sociodemographic, behavioral, and health status covariates, all of which significantly predicted 20-year mortality in previous research with this overall sample (Holahan et al., 2010b). Death across a 20-year follow-up period was confirmed primarily by death certificate. Descriptive and psychometric information on the measures is available in the following sources: (a) Health and Daily Living Form (Moos, Cronkite, & Finney, 1992) for the measures of daily alcohol consumption, depressive symptoms, smoking status, and physical activity; (b) Drinking Problems Index (Finney, Moos, & Brennan, 1991) for the measure of drinking problems; (c) Life Stressors and Social Resources Inventory (Moos & Moos, 1994) for the measures of medical conditions, number of close friends, and quality of friend support; and (d) Coping Responses Inventory (Moos, 1993) for the measure of avoidance coping.

Alcohol Consumption Groups

Alcohol consumption groups at baseline were operationalized in two steps. The first step identified *moderate drinkers* at baseline using items that tapped average daily alcohol consumption during the last month. Then, among individuals who on average were moderate drinkers, we identified *regular moderate drinkers* vs. *moderate drinkers who engaged in episodic heavy drinking* using a separate set of items that tapped the amount individuals drank on the largest drinking occasion during the last month.

Moderate drinkers—Average daily alcohol consumption was assessed at baseline with a quantity-frequency index. Specifically, respondents were asked: “During the last month, how much of each of the following beverages did you usually drink in a typical day when you drank that beverage?”. Quantity of alcohol consumption was assessed by items that measured amounts of wine, beer, and liquor participants had consumed on the days they drank in the last month. Responses to these items were converted to reflect the ethanol content of the beverages consumed. Frequency of alcohol consumption was assessed by responses to questions asking how often per week (never, less than once, once or twice, three to four times, nearly every day) participants had consumed wine, beer, or liquor in the last month. From this information, quantity-frequency values were calculated to provide indices of participants’ average daily ethanol consumption from each beverage type. Summing average daily ethanol consumption from the three beverage types provided a composite index of participants’ *overall average daily alcohol consumption*.

Using the measure of average daily alcohol consumption, number of drinks per day was indexed based on the approximation that in the U.S. 5 oz of wine, 12 oz of beer, and 1 shot (1.5 oz) of liquor contain an average of 0.6 oz of ethanol (NIAAA, 2007). Moderate drinkers were identified following NIAAA guidelines (Gunzerath et al., 2004; NIAAA, 2007) as individuals whose average daily alcohol consumption at baseline was at least one-half drink per day but no more than one drink/day for women and two drinks/day for men. Very light drinkers (> 0 to < 1/2 drink on average per day) were excluded because it was statistically unlikely that they would be episodic heavy drinkers.[1]

Regular moderate drinkers vs. moderate drinkers who engaged in episodic heavy drinking—Next, among individuals who met the above definition of moderate drinking, we identified episodic heavy drinking through responses to additional items at baseline that asked separately for wine, beer, and liquor: "During the last month what was the largest amount you drank of each of the following beverages?" Response options were indexed in number of glasses of wine, cans of beer, and shots of liquor. Heavy episodic drinking was defined consistent with NIAAA guidelines on binge drinking (Gunzerath et al., 2004) and in a manner that is identical to that currently used in the U.S. National Epidemiologic Survey on Alcohol and Related Conditions Survey and the U.S. Behavioral Risk Factor Surveillance System for binge drinking (Chavez et al., 2011). Specifically, among individuals meeting the criteria for moderate drinking described above, heavy episodic drinking was defined as consuming four or more (for women) and five or more (for men) drinks on the occasion of the largest amount of drinking. Correspondingly, among individuals meeting the criteria for moderate drinking described above, *regular moderate drinking* was defined as consuming fewer than four (for women) and fewer than five (for men) drinks on the occasion of the largest amount of drinking.

Sociodemographic factors—In addition to age and gender (female = 0, male = 1), two sociodemographic factors were assessed at baseline: socioeconomic status (SES) and marital status. We indexed socioeconomic status (SES) as the average of participants' family income and years of education, using standard scores for both measures to equate their scales. Marital status was assessed by a dichotomous index (not married = 0; married = 1).

Drinking problems—Baseline drinking problems were assessed by the Drinking Problems Index (DPI; Finney et al., 1991). The DPI includes 17 alcohol-related problems experienced during the past 12 months specifically appropriate for late-middle-aged and older adults (α = .94). Items tap functioning problems, such as whether the individual neglected daily activities or had a fall or accident due to drinking, and interpersonal problems, such as whether family members or friends expressed concerns about the participant's drinking. Items were dichotomized (yes/no) and, following Brennan and Moos (1990), individuals who endorsed two or more items were considered to have drinking problems. Construct validity is supported by significant associations with prior history of alcohol misuse and treatment for alcohol abuse (Finney et al., 1991; Kopera-Frye, Wiscott, & Sterns, 1999).

Medical conditions—Medical conditions at baseline were indexed as a count of nine self-reported medical conditions experienced in the past 12 months (cancer, diabetes, heart problems, stroke, high blood pressure, anemia, bronchitis, kidney problems, and ulcers). Participants were instructed to report a medical condition "only if diagnosed by a physician."

[1]Only 14 of 360 (3.9%) very light drinkers (> 0 to < 1/2 a drink on average/day) were episodic heavy drinkers. Mortality during the 20-year follow-up period was 71% and 51% for very light drinkers who were vs. those who were not episodic heavy drinkers, respectively.

Obesity—Each respondent's body mass index (BMI) was calculated based on reported height and weight at baseline. BMI was calculated as (weight in pounds × 703)/height in inches squared. Obesity was operationalized as a BMI of 30 or more (score = 1) versus a BMI of less than 30 (score = 0).

Smoking status—Current cigarette smoking at baseline was operationalized as smoking one or more cigarettes per day (non-smoker = 0, smoker = 1).

Physical activity—Following previous research (Harris et al., 2006; Holahan et al., 2010b), we were able to derive a partial index of level of physical activity at baseline by summing four items asking participants whether or not (no = 0; yes = 1) during the last month they engaged in: (a) swimming or tennis with friends, (b) swimming or tennis with family, (c) long hikes or walks with friends, and (d) long hikes or walks with family. Summing items, the total score ranged from zero (no activity) to four (high activity).

Depressive symptoms—Depressive symptoms at baseline were tapped by an index of 18 symptoms experienced during the previous month. Seven items tapped mood-related symptoms (e.g., feeling depressed (sad or blue)) and eleven items tapped behavioral manifestations of depression (e.g., loss of interest or pleasure in your usual activities). Responses were reported on a 5-point scale reflecting how frequently symptoms were experienced, from *never* (0) to *often* (4). The depressive symptoms score is the sum of responses across the 18 items (Cronbach's α =.92). This measure of depressive symptoms has excellent convergent validity, correlating on average .90 with the Beck Depression Inventory (Billings & Moos, 1985), and excellent criterion validity in discriminating between depressed patients and community controls and in predicting physical health outcomes (Holahan et al., 2010a).

Avoidance coping—Respondents were asked at baseline to identify the "most important problem or stressful situation" they had experienced in the past 12 months and to rate how frequently they had engaged in each of a variety of coping responses to deal with it, using a 4-point scale ranging from *not at all* (0) to *fairly often* (3). Avoidance coping included 6 items that tap cognitive attempts to avoid thinking realistically about the problem (e.g., "Did you try to deny how serious the problem really was?") and 6 items that tap behavioral attempts to reduce tension by expressing negative feelings rather than dealing directly with the problem (e.g., "Did you take it out on other people when you felt angry or depressed?"). The avoidance coping score is the sum of responses across the 12 items (Cronbach's α = .74).

Number of close friends—Number of close friends was indexed at baseline based on respondents' response to an item that asked: "How many close friends do you have, people you feel at ease with and can talk to about personal matters?" Responses were coded from 0 to 4-or-more.

Quality of friend support—Quality of friend support was indexed at baseline as the sum of six items tapping the quality of support from friends. For example, respondents were

asked: "Can you count on your friends to help you when you need it?" Responses were scored on a 5-point scale, ranging from *never* (0) to *often* (4) (Cronbach's $\alpha = .88$).

Total mortality—The outcome variable was total mortality (surviving = 0, death = 1) during the 20-year follow-up. A total of 182 (41%) of the 446 participants died during the 20-year follow-up. Among those who died, 84 participants (46%) died during the interval from baseline to 10 years and 98 participants (54%) died during the interval from 10 to 20 years. Fact of death was confirmed by death certificate for 92% of cases, by another official source (primarily the Social Security Death Index) for 7% of cases, and verbally by telephone by an individual at the participant's former residence (primarily the spouse) for 1% of cases.

Analytic plan—In preliminary analyses, we examined the association between baseline alcohol group membership and each covariate, using analyses of variance for continuous variables and chi-square analyses for categorical variables. Next, following Anderson et al. (2003), we conducted multiple logistic regression analyses to examine 20-year total mortality. Based on Roerecke and Rehm (2010), we compared moderate drinkers who engaged in episodic heavy drinking to regular moderate drinkers in predicting 20-year mortality. Following Holahan et al. (2010b), the multiple logistic regression analyses controlled for age, gender, SES, marital status, medical conditions, obesity, smoking status, physical activity, depressive symptoms, avoidance coping, number of close friends, and quality of friend support, as well as average daily alcohol consumption.

Results

Descriptive Information

Among the 446 moderate drinkers at baseline, 74 participants (17%) engaged in episodic heavy drinking and 372 participants (83%) were regular moderate drinkers. The number of participants who died during the 20-year follow-up period among moderate drinkers who engaged in episodic heavy drinking and regular moderate drinkers was 45 (mortality rate = 61%), and 137 (mortality rate = 37%), respectively. Although more men ($n = 151$, mortality rate = 45%) than women ($n = 31$, mortality rate = 28%) died across the 20-year period, the distribution of deaths across alcohol consumption groups was similar for women and men ($\chi^2(1) = 0.09$, $n = 182$, $p = .76$).

Tests of Covariates

In preliminary analyses, we examined the association between baseline alcohol group membership and each baseline covariate (Table 1). Compared to moderate drinkers who were episodic heavy drinkers, regular moderate drinkers were significantly ($p < .05$) higher on SES, less likely to be obese and to smoke, and lower on depressive symptoms and avoidance coping.

20-Year Total Mortality

Next, we compared the total mortality odds of moderate drinkers who were episodic heavy drinkers and regular moderate drinkers in a multiple logistic regression analysis. Results of

the model test with all variables entered simultaneously are presented in Table 2. After adjusting for the full set of covariates, as well as for average daily alcohol consumption, in comparison to regular moderate drinking (score = 0), moderate drinking in conjunction with episodic-heavy drinking (score = 1) was associated with a more than two times increase in the odds of total mortality during the 20-year period. The accuracy of the model was excellent in terms of both calibration (difference between observed and estimated outcomes; Hosmer-Lemeshow goodness of fit test = 0.39, $df = 8$, $p = .99$) and discrimination (probability of correctly identifying a death from a randomly chosen pair; c-index = 0.77, $p < .01$).

The interaction between episodic heavy drinking and gender was not significantly associated with 20-year total mortality (*OR* = 0.65, $p > .05$, 95% *CI* = 0.15, 2.80). Moreover, the interaction between episodic heavy drinking and time in the study (years to death for individuals who died or years to the last assessment for those who did not die) was not significantly associated with 20-year total mortality (*OR* = 1.06, $p > .05$, 95% *CI* = 0.93, 1.19).

Drinking Problems

We also considered the potential role of drinking problems at baseline. Moderate drinkers who were episodic heavy drinkers were three times more likely than regular moderate drinkers to be problem drinkers at baseline (43% vs. 14%; ($\chi^2(1) = 33.64$, $n = 446$, $p < .01$). Moreover, moderate drinkers with baseline drinking problems were more likely to die during the study period compared to moderate drinkers without baseline drinking problems (54% vs. 38%; ($\chi^2(1) = 7.70$, $n = 446$, $p < .01$). However, in the context of the other covariates, the results are essentially the same controlling for baseline drinking problems.

Discussion

The purpose of the present study was to examine the association of episodic heavy drinking to total mortality among moderate drinking older adults. We applied established NIAAA definitions of drinking behavior, had a 20-year follow-up of older adults, included both women and men, and used a robust set of covariates. Alcohol consumption was assessed at baseline and total mortality was indexed across a 20-year follow-up.

Compared to moderate drinkers who were episodic heavy drinkers, regular moderate drinkers were significantly higher on SES and lower on obesity, smoking status, depressive symptoms, and avoidance coping. After adjusting for all covariates, as well as overall alcohol consumption, moderate drinkers who were episodic heavy drinkers in comparison to regular moderate drinkers showed a more than two times increase in the odds of total mortality during the 20-year period. Findings did not differ for women and men based on a non-significant test of the interaction between gender and alcohol group membership in predicting mortality.

Research examining the potential health effects of moderate alcohol consumption has focused overwhelmingly on average consumption, with relatively little attention to underlying drinking patterns (Gunzerath et al., 2004). This has obscured our understanding

of the potentially important effect of drinking pattern independent of overall consumption (Rehm et al., 2010). The present findings extend those of previous research on episodic heavy drinking and total mortality (Kauhanen et al., 1997; Laatikainen et al., 2003; Mukamal et al., 2005), demonstrating that—even among moderate-drinking older adults—drinking pattern needs to be addressed along with overall consumption to understand alcohol's health effects.

The importance of considering drinking patterns when examining alcohol and health is also a methodological concern. Studies that have failed to identify positive health effects associated with moderate alcohol consumption may include a high proportion of episodic heavy drinkers in the study population (Roerecke & Rehm, 2010). This concern is especially important in comparing studies across countries in which there are substantial differences in typical drinking pattern (Bobak et al., 2004, Ruidaverts et al., 2010).

Several limitations should be kept in mind in interpreting the present findings. As with other research on alcohol consumption and mortality in humans, these are not experimental findings and do not provide evidence of causality. Although we controlled for a wide range of confounding factors, there may be other important factors associated with alcohol consumption that remained uncontrolled (see Naimi et al, 2012). Moreover, imperfect operationalization of the factors we did control for leaves room for residual confounding. For example, our measure of physical activity was limited to a narrow range of activities with family or friends.

Moreover, although mortality was indexed objectively, our measures of alcohol consumption were based on self-report. However, there is support for the validity of self-report measures of alcohol consumption for mixed-age and older adults (Babor et al., 1987; Stacy et al., 1985; Tucker et al., 1991; Werch, 1989). Nevertheless, future research would be strengthened by including objective indices or collateral information on alcohol use. For example, even though we controlled for reported average daily alcohol consumption, irregular heavy drinkers may underestimate the alcohol volume associated with their above-modal drinking occasions.

Also, because episodic heavy drinking was assessed by beverage type, some episodes of heavy drinking may have been missed if more than one type of alcoholic beverage was consumed on the largest drinking occasion. In addition, although a strength of our study is the use of baseline alcohol consumption to predict 20-year mortality, a limitation is that we did not consider the effects of changes in alcohol consumption over time. In this regard, alcohol consumption generally declines over time among older adults, particularly among those close to the upper limit of moderate drinking (Brennan et al., 2011; Platt et al., 2010). Finally, because the overall project used screening criteria to select individuals who had consumed alcohol at least once a week but had never had a drinking problem and individuals with current or past drinking problems, caution is needed in generalizing findings from this investigation to the broader population of older adults.

Overall, alcohol is a significant risk factor for chronic disease and injury, with potential salutary effects most evident among older adults in the relatively few countries where

alcohol is consumed in a regular, moderate pattern (Naimi et al., 2012; Rehm et al., 2009). In the context of social pressures that promote excessive consumption as normative (Wettlaufer et al., 2012), a transition from non-problem to problem drinking may be a "slippery slope" for moderate drinkers prone to occasional heavy drinking (O'Keefe et al., 2007, p. 1013). In fact, episodic heavy drinking is a significant public health problem (Roerecke & Rehm, 2010) that is frequent among middle-aged and older adults (Blazer & Wu, 2009). This pattern of drinking may be especially risky for older adults due to aging-related elevations in comorbidities and medication use (Barnes et al., 2010). Our findings reinforce these concerns. Among older moderate drinkers, those who engage in episodic heavy drinking show significantly increased total mortality risk compared to regular moderate drinkers.

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Table 1

Means for baseline covariates by baseline alcohol consumption group membership. For continuous variables, standard deviations are shown in parentheses.

Covariate	Episodic-Heavy Moderate Drinkers (n = 74)	Regular Moderate Drinkers (n = 372)	Overall Test[b]
Age	61.00 (2.99)	61.61 (3.19)	$F = 2.33$
Gender (Female = 0, Male = 1)	.80	.74	$\chi^2 = 1.11$
SES[a]	−0.28 (0.86)	0.29 (0.81)	$F = 30.04^{**}$
Marital Status (No = 0, Yes = 1)	.70	.80	$\chi^2 = 3.76$
Medical Conditions	1.15 (1.26)	0.92 (1.07)	$F = 2.54$
Obesity (No = 0, Yes = 1)	.19	.07	$\chi^2 = 10.05^{**}$
Smoking Status (No = 0, Yes = 1)	.32	.16	$\chi^2 = 10.73^{**}$
Physical Activity	1.03 (1.13)	1.25 (1.25)	$F = 2.06$
Depressive Symptoms	22.81 (13.51)	17.77 (12.61)	$F = 9.63^{**}$
Avoidance Coping	6.14 (3.58)	4.37 (2.92)	$F = 21.02^{**}$
Number of Close Friends	2.84 (1.37)	2.80 (1.35)	$F = 0.04$
Quality of Friend Support	16.18 (4.99)	16.59 (4.70)	$F = 0.47$

[a] Standardized scale.

[b] *df* for $F = 1, 444$; *df* for $\chi^2 = 1$

** $p < .01$

Table 2

Results of a multiple logistic regression analysis predicting 20-year total mortality for episodic heavy drinking among baseline moderate drinkers, controlling for all baseline covariates and average daily alcohol consumption (n = 446).

Covariates	Odds Ratio	95% CI
Age	1.09*	1.02, 1.18
Gender (Female = 0, Male = 1)	2.05*	1.13, 3.69
SES[a]	0.63**	0.47, 0.83
Marital Status (No = 0, Yes = 1)	1.30	0.74, 2.26
Medical Conditions	1.77**	1.44, 2.18
Obesity (No = 0, Yes = 1)	1.93	0.91, 4.12
Smoking Status (No = 0, Yes = 1)	3.02**	1.68, 5.43
Physical Activity	0.93	0.77, 1.12
Depressive Symptoms	1.01	0.99, 1.04
Avoidance Coping	0.90*	0.82, 0.98
Number of Close Friends	0.93	0.77, 1.12
Quality of Support	1.06*	0.003, 1.12
Average Daily Alcohol Consumption	0.86	0.34, 2.16
Episodic Heavy Drinking (Among Moderate Drinkers)	2.13*	1.14, 3.97

[a] Standardized scale.

* $p < .05$

** $p < .01$