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### Authors

Borok, Jenna  
Galier, Peter  
Dinolfo, Matteo  
[et al.](#)

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## Why do older unhealthy drinkers decide to make changes or not in their alcohol consumption? Data from the Healthy Living as You Age Study

**Jenna Borok, B.S.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Peter Galier, M.D.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Matteo Dinolfo, M.D.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Sandra Welgreen, M.D.,**

Department of Medicine, Kaiser Permanente, Southern California, Panorama City, CA

**Marc Hoffing, M.D.,**

Desert Oasis Healthcare, Palm Springs, CA

**James W. Davis, M.D.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Karina D. Ramirez, B.A.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Diana H. Liao, M.P.H.,**

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Lingqi Tang, Ph.D.,**

Department of Psychiatry and Biobehavioral Sciences, Health Services Research Center,

Department of Medicine, University of California at Los Angeles, Los Angeles, CA

**Mitch Karno, Ph.D.,**

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**Requests for reprints and correspondences should be addressed to:** Alison A. Moore, M.D., M.P.H., Division of Geriatric Medicine, David Geffen School of Medicine at UCLA, 10945 Le Conte Blvd., Suite 2339, Los Angeles, CA 90095, Phone: (310)825-8253, Fax: (310)794-2199, aamoore@mednet.ucla.edu.

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**Author Contributions:**

Jenna Borok: study concept and design, analysis and interpretation of data, preparation of manuscript

Peter Galier, M.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Matteo Dinolfo, M.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Sandra Welgreen, M.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Marc Hoffing, M.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

James Davis, M.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Karina Ramirez: study concept and design, acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Diana Liao, M.P.H.: analysis and interpretation of data, preparation of manuscript

Lingqi Tang, Ph.D.: acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Mitch Karno, Ph.D.: analysis and interpretation of data, preparation of manuscript

Paul Sacco, Ph.D., LCSW: analysis and interpretation of data, preparation of manuscript

James C. Lin, M.D., M.B.A.: analysis and interpretation of data, preparation of manuscript

Alison A. Moore, M.D., M.P.H.: study concept and design, acquisition of subjects and/or data, analysis and interpretation of data, preparation of manuscript

Integrated Substance Abuse Programs, University of California at Los Angeles, Los Angeles, CA

**Paul Sacco, Ph.D., LCSW,**

University of Maryland School of Social Work, Baltimore, MD

**James C. Lin, M.D., M.B.A.,** and

Department of Medicine, Cheng Ching Hospital, Taichung, Taiwan

**Alison A. Moore, M.D.**

Department of Medicine, Department of Psychiatry and Biobehavioral Sciences, University of California at Los Angeles, Los Angeles, CA

## Abstract

**Objectives**—To understand characteristics of and reasons why older at-risk drinkers decide to change or maintain their alcohol consumption.

**Design**—Secondary analysis of data from a randomized controlled trial to reduce drinking among at-risk drinkers.

**Setting**—Three primary care sites in southern California.

**Participants**—Six-hundred and thirty one adults aged 55 years and older who were at-risk drinkers at baseline and five hundred twenty-one of them who completed a 12 month assessment.

**Measurements**—Sociodemographic and alcohol-related characteristics were compared using descriptive statistics between 12 month assessment completers and non-completers, and among those completing the 12 month assessment by telephone or mail. Reasons why respondents maintained or changed average alcohol consumption were asked among those who completed a 12 month assessment by telephone. Factors that might motivate at-risk drinkers to reduce drinking were asked and frequencies were calculated for these responses.

**Results**—Participants were primarily male, White, highly educated and in good health. Those who responded to the 12 month assessment by mail were more likely than to be working, in the intervention arm, and to drink more. Most who reduced alcohol consumption and heavy drinking did so because they thought it would be of benefit to them. Those who did not thought it was not a problem for them. Both groups cited their environment and circumstances as influencing their drinking. Remaining at-risk drinkers reported that medical evidence that alcohol was harming them would motivate them to reduce drinking.

**Conclusion**—Older adults report they make reductions in drinking when they recognize their drinking habits may be causing them harm and one's environment can hinder or help one to make reductions in drinking.

## Keywords

alcohol; aging; behavior

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## INTRODUCTION

Almost half of all adults aged 65 years and older consume alcohol [1, 2]. While light to moderate consumption of alcohol has been associated with many benefits [3–6], the potential for negative effects of alcohol use at a given dose are greater for older adults than in younger persons [7, 8]. These risks are due to physiologic changes with aging that increase blood alcohol levels for a given amount consumed, brain sensitivity to alcohol, as well as increases in morbidity and medication use.[9–11]

Recommended drinking limits for adults aged 65 years and older are defined by the National Institute of Alcohol Abuse and Alcoholism (NIAAA) as no more than seven drinks per week and no more than three drinks per occasion. [12] NIAAA also recommends lower drinking limits or abstinence for those who take medications that interact with alcohol or have a health condition exacerbated by alcohol. The prevalence of older adults who exceed these recommended drinking limits or who have other reasons to limit drinking (e.g., at-risk drinkers) has been estimated to include 18% of men and 5% of women.[8] As the older adult population increases (1 in 5 people in the U.S. will be over 65 years old by 2030) [13], the number of at-risk drinkers will likely increase as well.[14, 15]

Factors associated with reductions in alcohol consumption in older age vary but often include poorer health, lower income, use of multiple medications, and fewer occasions to drink. [16–18] Factors associated with maintenance or increases in drinking in older age include being male, White, having higher education and income, having social networks that encourage drinking and using alcohol to cope and to manage pain. [16, 17, 19–21] Studies aiming to reduce alcohol consumption in older and younger populations have employed interventions in primary care settings and delivered by primary care providers and/or health educators. [22–25] Intervention components typically include personalized assessment and feedback, goal setting, and monitoring of consumption such as through use of a diary.[24–26]

Though we know some of the factors associated with reductions in alcohol use that occur with advancing age as well as interventions that are successful in reducing alcohol use among older adults, we are unaware of any studies examining what older adults report influenced them to make changes or not make changes in their alcohol consumption. At the end of a randomized trial testing an intervention to reduce at-risk drinking and amount of drinking among older adults in primary care, [26] we compared sociodemographic and alcohol-related characteristics of persons who completed a 12-month survey by telephone and by mail. We also asked questions of participants who completed the survey by telephone about what influenced them to make changes in their alcohol consumption and, if they did not change, why they did not do so. We did so to understand at-risk drinkers' self-identified reasons to change or maintain their drinking habits. This research helps to develop our understanding of older adult drinking and can inform intervention strategies to help older adults reduce at-risk drinking.

## METHODS

### Study site and participants

This analysis uses data from the Healthy Living As You Age (HLAYA) study, a randomized clinical trial of a multi-component intervention aimed to reduce at-risk drinking and amount of alcohol use for older at-risk drinkers in primary care settings. [26] Three organizations in Southern California participated in the study including an independent provider organization, a large health maintenance group, and a university-affiliated primary care system. One hundred forty-five primary care providers (PCP) were trained to deliver brief advice to reduce drinking based on the National Institute on Alcohol Abuse and Alcoholism publication, *Helping Who Drink Too Much: A Clinician's Guide*. [12]

Participants were recruited from October 2004 to April 2007 and were identified from a list of patients who were aged 55 years and older and who had an appointment with a participating PCP in the following week. From this list, clinical staff and volunteers called patients to introduce the study as one focusing on healthy behaviors in older adults and to assess if they met additional eligibility criteria for screening and reporting having consumed at least one alcoholic drink in the past week. Those who met these criteria were administered

a screening instrument for at-risk drinking in older adults, the Comorbidity Risk Evaluation Tool (CARET) [27–29]. The CARET includes questions evaluating the past 12-months: 1) quantity and frequency of drinking, 2) episodic heavy drinking (four or more drinks on an occasion), 3) driving within 2 hours of drinking three or more drinks, 4) others being concerned about the respondent's drinking, 5) medical and psychiatric conditions, 6) symptoms that could be caused or worsened by alcohol and 7) medications that could interact negatively with or whose efficacy could be reduced by alcohol. Based on their responses to the 7 types of questions on the CARET, patients were identified as either an at-risk (score 1–7) or not at-risk drinker (score 0). Six hundred thirty-one individuals were identified by the CARET as at-risk drinkers, agreed to participate in the trial and, at the time of a regular visit with their PCPs (approximately a week later, i.e., baseline visit), were randomly assigned to intervention (n=310) or control (n=321) groups. To legitimize alcohol use as a health issue and to mask the true purpose of the study to potential participants before randomization occurred, questions on seat belt use, exercise, diet and smoking were asked. [30]

### Intervention Group

At the baseline visit, participants randomized to the intervention group were told that the study focused on healthy drinking behaviors. Before seeing their PCPs, participants were given a personalized report and drinking diary to keep track of alcohol use. The reports outlined CARET-identified alcohol-associated risks (e.g., drinking two drinks daily and often feeling sad or blue) and potential consequences (e.g., worsening of depression). PCPs got a similar version of this report and during the visit; each PCP was instructed to give participants oral and written advice (in prescription-style format on an alcohol education booklet). Participants also received a telephone call from a health educator call at 2, 4, and 8 weeks after the baseline visit. During these calls, the health educator provided additional feedback and guidance using motivational interviewing strategies to help reduce alcohol consumption. [31] Participants in the control group received a booklet outlining recommended behaviors for alcohol use, nutrition, exercise, medication use and smoking at the baseline visit. They were encouraged to read the booklet and discuss it with their PCPs.

### Data Collection and Outcomes

Before randomization, questionnaires evaluating demographic, health related and alcohol consumption characteristics were completed. The CARET and 7-day alcohol time-line follow back (TLFB) [32] were used to assess alcohol consumption. Follow-up assessment calls were made at 3 and 12 months after baseline and included the CARET and 7-day alcohol TLFB. Those who did not respond to up to three phone calls were mailed a survey containing a subset of items (i.e., only the CARET and 7-day alcohol TLFB) to complete and return in a pre-paid and addressed envelope.

Of the 631 persons enrolled at baseline, by the 12 month follow-up, 58 were not assessed as they had withdrawn from the study (n=53) or were deceased (n=5). Of the remaining 573, 399 were reached by telephone and completed the telephone survey and 122 were not reached by telephone and completed a mailed survey, another 52 persons were not able to be reached by phone or mail. Among those completing the survey over the telephone at 12 months, the research assistant used the CARET to determine each participant's risk status (at-risk or not at-risk) and the 7-day alcohol TLFB to determine amount of drinking in the past 7 days. At this point, control group participants were told the true purpose of the study: to address drinking behaviors. The research assistant then asked additional questions addressing reasons for changes in or maintenance of a) quantity and frequency of drinking in past 7 days, and b) frequency of heavy drinking (4 or more drinks on one occasion) in past 7

days. Those who were still at-risk drinkers were then asked what might motivate them to change their drinking.

### Data Analysis

We compared baseline demographic, health-related and alcohol consumption data between 1) persons who completed the 12 month surveys (n=521) and those who did not (n=110) and also 2) those who completed the 12 month survey over telephone (n=399) and those who completed it by mail (n=122). We also compared 3 and 12 month data on drinking for the groups. We used chi square tests to compare categorical data and t tests to compare continuous data.

We reviewed the responses from the persons who answered the questions on the 12 month telephone survey and created new categories of responses when multiple respondents reported similar reasons (e.g., we created a new category: change in drinking due to environment or circumstances) and then reported frequencies of participants' responses.

## RESULTS

### Sample Characteristics at 12 months

Five hundred twenty-one participants (83%) responded to the 12 month survey. Compared to persons completing the 12 month survey, those who did not complete it (N=110) did not differ in baseline sociodemographic, health or alcohol consumption characteristics except they were less likely to be able to do strenuous activities (77% vs. 66%) or heavy work (85% vs. 77%) (Table 1).

Overall the sample had an average age of 68.6 years, was primarily male, White, highly educated, married, retired, able to do strenuous activities, reported excellent or very good self-rated health, and high quality of life. (Table 1) On average, compared to baseline, participants reduced their reported alcohol consumption, number of risks, and fewer were still at-risk drinkers.

Of the 521 persons completing the 12 month survey, 399 (77%) completed it over the telephone and 122 (23%) did not respond to telephone calls about the survey but responded to a shorter version of the survey by mail. Compared to persons who completed the telephone interview, those who completed the mailed survey were more likely to be working rather than retired, were more likely to be in the intervention arm, and, at 12 months, had higher self-reported number of drinks in the past 7 days, more heavy drinking days in the past 7 days, a higher baseline risk score and were more likely to still be at risk drinkers. (See Table 1)

### Self-reported reasons for changes in or maintenance of quantity and frequency of drinking

At 12 months, only those who completed the telephone survey (N=399) were asked questions about why they decided to change or maintain their drinking habits. Among this sample who completed the telephone survey, 252 persons (63.2% of respondents) 'reduced' their usual amount of alcohol consumption, 30 (7.5%) 'increased' and 117 (29.3%) 'made no change' in their reported alcohol consumption. For further analyses, we combined the 'increased' and 'made no change' in drinking groups (N=147) because their responses were very similar. We reported the responses of those who completed the telephone survey. (Table 2)

Among those persons who decreased drinking, almost half reported doing so because they thought it would benefit them. More than 10% reported decreasing drinking due to each of

the following reasons: changes in environment or circumstances, because of primary care provider (PCP) suggestion, in response to information obtained in the study, or unsure. (Table 2) Most participants in this group did not make a change because they did not think the amount of alcohol they consumed was a problem and not at-risk drinkers were more likely to report this as a reason compared to at-risk drinkers. (Table 2) To better understand differences between the group who reduced drinking and those who did not, we compared baseline demographic, health and drinking characteristics. We found that at-risk drinkers who reduced drinking were more likely to be female, have had a heavy drinking day in the past 7 days, and have a higher risk score. (Data not shown)

### **Reasons for change in or maintenance of reported frequency of heavy drinking episodes in past 7 days**

At 12 months, among the 303 persons who completed the telephone survey and, at the baseline, 3 month or 12 month assessment reported drinking 4 or more drinks on an occasion (defined as a heavy drinking day) in the past 7 days, 164 (54%) 'reduced' the frequency of heavy drinking days, and 139 (46%) 'made no change' (n=98) or 'increased' (n=41) the frequency of heavy drinking days. A subset of this sample, n=253, were asked reasons why they changed or maintained the frequency of heavy drinking episodes. Of this subset, 141 (56%) 'reduced' the frequency of heavy drinking days, and 112 (44%) 'made no change' (n=84) or 'increased' (n=28) the frequency of heavy drinking days. Like we did for the analyses of amount of alcohol consumption, we combined the 'increased' and 'made no change' in days of heavy drinking groups and reported the responses for a) the entire sample, b) intervention and control groups and c) at-risk and not at-risk groups. (Table 2)

The reasons for making change in heavy drinking were similar to the reasons for change in usual amount of drinking. Among those persons who decreased, almost half reported doing so because they thought it would be of benefit to them and more than 10% reported decreasing heavy drinking days due to each of the following reasons: changes in their environment or circumstances, PCP suggestion, in response to information obtained in the study, and unsure. Intervention group participants were more likely than control group participants and not at-risk drinkers were more likely than at-risk drinkers to have reduced the frequency of heavy drinking days. (Table 2) Almost half of participants in this group did not make a change because they did not think the amount of alcohol they consumed was a problem.

In Table 3 are quotes that illustrate reasons why respondents changed or maintained usual quantity and frequency of drinking and heavy drinking. We combined both quantity and heavy drinking responses, as self-reported reasons were similar.

### **Willingness to change drinking among at-risk drinkers at 12 months**

Among those still considered at-risk drinkers at the 12 month survey and who completed the telephone interview, (n=215), 46% (n=98) answered yes when asked if there was something that would help them cut down drinking. When this subgroup was asked for specific things that would motivate them, 53% of them said that medical evidence that alcohol was affecting their health would motivate them to cut down. Other motivators reported included: PCP advice to reduce (18%), environment or circumstance (17%) and personal motivation (16%). The following are quotes from those asked what might motivate them to make a change in their drinking. "Self motivation-benefit health." "Reading it in a medical journal might motivate me." "Real health problems would cause me to cut down on drinking." "Reduce stress in life." "Need conflicting studies to be more clear. I've heard that 2 drinks daily is good for you."

## DISCUSSION

This study examined sociodemographic and health-related characteristics of older at-risk drinkers who participated in a randomized trial testing the efficacy of an intervention to reduce drinking in primary care settings and who completed a 12 month survey. Persons who participated in the study were representative of older persons in the population who drink alcohol in the US; primarily younger, male, White, highly educated, and in good health. [33, 34] Those who responded to the 12 month evaluation by mail, rather than by telephone, were more likely than those who completed it by telephone to be working, in the intervention arm, and to drink more.

Among those who completed a 12 month survey via telephone, we evaluated the self reported reasons for changes in or maintenance of their drinking habits. We found that most reduced drinking because they thought it would benefit them and most respondents who were still at-risk drinkers reported that medical evidence that alcohol was harming them would motivate them to make change. Conversely, those who did not make reductions in their drinking reported not doing so because they did not perceive their drinking to be a problem. The quotes from participants reveal the range of social, emotional, health-related, and economic reasons why they did or did not make changes in their drinking behavior.

Others have examined predictors of changes in drinking in community-based samples of older and younger adults and generally have found that increases in health problems are associated with reductions in, or cessation of drinking [16, 35–37] and in some studies, older adults cite health problems as the reason they have reduced drinking. [20, 36, 38–39] Others have observed that alcohol is used by some older adults to manage pain. [36] A few of our study participants also cited pain as a reason to maintain or increase alcohol use.

Study participants who were still at-risk drinkers reported that medical evidence that alcohol was harming them would motivate them to make change. This finding supports others' research findings that those who do reduce drinking do so primarily for health reasons. Social and environmental reasons were also cited as reasons for both reducing and not reducing alcohol consumption.

Though our findings are comparable to previous research findings, our study had limitations. The biggest limitation is that those persons who participated in the telephone interview and were asked reasons for making changes in their drinking behaviors or not making such changes drank less and were more likely to be in the control group than those who completed the survey by mail and were not asked these questions. While the answers respondents gave regarding reasons they did or did not make changes in their drinking make sense, it would have been valuable to learn what the higher risk group who didn't complete the interview via telephone had to say in this regard. Another limitation is that the data were collected using a primarily close ended response options and it is possible we would have learned more if we had included more open ended questions and conducted formal qualitative analyses. Respondents' answers to our questions about reasons for change may also have been influenced by social desirability.

Finally, the study data indicate that older adults make changes to their drinking habits when they recognize their drinking habits may be causing them harm and that one's environment can hinder or help one to make reductions in drinking. This demonstrates the importance of being advised about alcohol's effects on one's personal health and of recognizing the importance of environment on the ability to make changes in behavior. Counseling interventions in the primary care setting are an effective approach to reducing alcohol consumption in adults of all ages [23, 40] and our data suggest that perhaps even repeated



advice to reduce drinking and attention to the individual’s circumstances and environment may further improve success in reducing unhealthy drinking.

Most older adults drink alcohol and as the population of older adults grows, so will the population of those who drink in excess of recommended drinking limits. [2] Because of physiological changes and increases in comorbidity and medication use, older adults are more vulnerable to the adverse effects of alcohol. While social context influences alcohol consumption among younger and older adults, it is also true that older adults who experience bereavement, loneliness, and social isolation are at greater risk for substance misuse. [16, 18, 36]

It is not certain how messages about recommended drinking limits should be communicated to older people who drink above these limits. The most commonly tested approach is to convey such messages via health care providers in primary care settings. [24–26] Studies using this approach generally have reduced drinking among older adults. There is much more work to be done, however, to explore alternative means of providing messages about recommended drinking limits to the growing population of older adults such as via the mail, community-based organizations, the internet and others.

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	Yes	No	Yes	No	Yes	No	Yes	No
Employment or Affiliation		X		X		X		X
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Patents		X		X		X		X
Personal Relationship		X		X		X		X

Elements of Financial/Personal Conflicts	*Author 5 Marc Hoffing, MD		Author 6 James Davis, MD		Author 7 Karina Ramirez		Author 8 Diana Liao, MPH	
	Yes	No	Yes	No	Yes	No	Yes	No
Employment or Affiliation		X		X		X		X
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Honoraria		X		X		X		X
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Consultant		X		X		X		X
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Royalties		X		X		X		X
Expert Testimony		X		X		X		X
Board Member		X		X		X		X
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Personal Relationship		X		X		X		X

Elements of Financial/Personal Conflicts	*Author 9 Linqi Tang, PhD		Author 10 Mitch Karno, PhD		Author 11 Paul Sacco, PhD, LCSW		Author 12 James Lin, MD, MBA	
	Yes	No	Yes	No	Yes	No	Yes	No
Employment or Affiliation		X		X		X		X
Grants/Funds		X		X		X		X
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Elements of Financial/Personal Conflicts	*Author 13 Alison Moore, MD, MPH							
	Yes	No	Yes	No	Yes	No	Yes	No
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	Yes	No	Yes	No	Yes	No	Yes	No
Patents		X						
Personal Relationship		X						

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**Table 1**

Baseline Characteristics by 12 Month Survey Response Status

Characteristic	12 month response among enrolled			Telephone survey vs mail survey among 12 month completers			
	All enrolled (N=631)	No 12 months data (N=110)	Had 12 Month data (N=521)	P value	Surveyed via telephone (N=399)	Surveyed via mail (N=122)	P value
Intervention (vs. control)	310 (49)	88 (80)	222 (43)	<0.001	159 (40)	63 (52)	.02
Age, Mean (SD)	68.4 (6.9)	67.7 (7.7)	68.6 (6.7)	0.26	68.7 (6.6)	68.0 (7.1)	0.28
Male sex	448 (71)	79 (72)	369 (71)	0.83	277 (69)	92 (75)	0.20
Race (ethnicity)							
White, non-Hispanic	551 (87)	97 (89)	454 (87)	0.75	353 (88)	101 (83)	0.18
Hispanic/Latino	58 (9)	8 (7)	50 (10)		33 (8)	17 (14)	
Other	22 (3)	4(4)	17 (3)		23 (3)	4 (3)	
Education							
High School or less	144(23)	25 (23)	119 (23)	0.44	87 (22)	32 (27)	0.28
Some College	194 (31)	39 (36)	155 (30)		116 (29)	39 (33)	
College degree or more	289 (46)	45 (41)	244 (47)		195 (49)	49 (41)	
Marital Status							
Married	311 (50)	49 (46)	262 (50)	0.66	192 (48)	70 (57)	0.08
Widowed, divorced, separated	170 (27)	32 (30)	138 (27)		115 (29)	23 (19)	
Never married	145 (23)	26 (24)	119 (23)		90 (23)	29 (24)	
Living Arrangement							
Living with spouse, partner or others	464 (74)	75 (69)	389 (75)	0.29	296 (74)	93 (76)	0.68
Living alone	165 (26)	34 (31)	131 (25)		102 (26)	29 (24)	
Employment Status							

Characteristic	12 month response among enrolled				Telephone survey vs mail survey among 12 month completers		
	All enrolled (N=631)	No 12 months data (N=110)	Had 12 Month data (N=521)	P value	Surveyed via telephone (N=399)	Surveyed via mail (N=122)	P value
Retired	441 (70)	69 (64)	372 (71)	0.29	300 (75)	72 (59)	<0.01
Homemaker	22 (4)	5 (5)	17 (3)		11 (3)	6 (5)	
Working full or part time	166 (26)	34 (31)	132 (25)		88 (22)	44 (36)	
Self-related Health Status							
Excellent or very good	328 (52)	54 (49)	274 (53)	0.79	212 (53)	62 (51)	0.87
Good	233 (37)	43 (39)	190 (37)		143 (36)	47 (39)	
Fair or poor	69 (11)	13 (12)	56 (11)		43 (11)	13 (11)	
Able to Do							
Strenuous activities	471 (75)	72 (66)	399 (77)	0.02	308 (77)	91 (75)	0.52
Heavy work	525 (83)	84 (77)	441 (85)	0.05	343 (86)	98 (80)	0.12
Self-rated quality of life (range 0–10), mean (SD)	7.9 (1.6)	7.7 (1.7)	7.9 (1.6)	0.21	7.9 (1.7)	7.9 (1.5)	0.86
Number of drinks in past 7 days, mean (SD)							
Baseline	15.2 (7.3)	14.6 (8.0)	15.3 (7.1)	0.39	15.4 (7.4)	14.9 (6.2)	0.51
3 months	9.9 (7.8)	9.5 (8.9)	10.0 (7.6)	0.67	9.9 (7.6)	10.5 (7.7)	0.48
12 months	10.2 (8.2)	--	10.2 (8.2)	--	9.6 (8.0)	12.1 (8.7)	<0.01
Had a heavy drinking day in past 7 days <sup>a</sup>							
Baseline	216 (34)	35 (32)	181 (35)	0.56	139 (35)	42 (34)	0.93
3 months	74 (14)	6 (13)	68 (14)	0.76	51 (13)	17 (17)	0.35
12 months	62 (12)	--	62 (12)	--	40 (10)	22 (20)	<0.01
Risk Score -- baseline (range 0–7), mean (SD)							

Characteristic	12 month response among enrolled				Telephone survey vs mail survey among 12 month completers		
	All enrolled (N=631)	No 12 months data (N=110)	Had 12 Month data (N=521)	P value	Surveyed via telephone (N=399)	Surveyed via mail (N=122)	P value
Baseline	3.0 (1.7)	3.1 (1.7)	2.9 (1.7)	0.45	2.9 (1.7)	2.8 (1.5)	0.55
3 months	1.5 (1.8)	1.8 (2.1)	1.5 (1.8)	0.15	1.4 (1.7)	1.6 (2.1)	0.28
12 months	1.5 (1.8)	--	1.5 (1.8)	--	1.3 (1.7)	2.1 (2.1)	<0.01
At risk (%)							
Baseline	621 (100)	110 (100)	521 (100)		399 (100)	77 (100)	
3 months	311 (56)	31 (58)	280 (56)	0.71	218 (56)	62 (56)	0.89
12 months	299 (57)	--	299 (57)	--	215 (54)	84 (69)	<0.01

Abbreviations: SD, Standard Deviation

<sup>a</sup>Heavy drinking day is defined as drinking 4 or more drinks in a day.



**Table 2**

Prevalence of and Reasons for Reductions and Increases or No Changes in Alcohol Consumption in Entire 12 Month Sample That Completed a Telephone Interview

	<b>Amount of alcohol consumption in past 7 days</b> N=399 N (%)	<b>Days of heavy drinking in past 7 days</b> N=253 N (%)
Reduced	252 (63)	141 (56)
Benefit to me	122 (48)	65 (46)
Environment/circumstance <sup>a</sup>	48 (19)	18 (13)
PCP suggestion	33 (13)	18 (13)
Study information	29 (12)	15 (11)
No idea	27 (11)	22 (16)
'Increased' or 'made no change'	147 (37)	112 (44)
Did not think it is a problem	93 (63)	51 (46)

<sup>a</sup>The category refers to changes in environment such as not going out as much or circumstances such as taking a medication for cancer. See other examples of this category in Table 3.

**Table 3**

Verbatim Responses for Decrease, Increase, or No Change in Alcohol Consumption

Decrease	Increase	No change
“Didn’t want to put on weight.”	“Cancer-hopelessness.”	“Habit.”
“Environment-happier, keeping busy.”	“I enjoy it and I’m not changing that.”	“Social pattern.”
“Been keeping busy so drinking less.”	“Alcohol makes me feel better. I substitute alcohol for pain medications, it relieves my arthritis pain.”	“If I enjoy it, why not?”
“Not going out as much with friends; keeping more busy.”	“More time to myself.”	“I’ve always drank the same and I don’t think it’s a lot.”
“Lost desire.”	“More friends; have been more social.”	“Eases pain.”
“Awareness, bringing it to my attention.”		
“Medicine and treatment for cancer.”		
“The health educator’s information and suggestion that I reduce.”		
“I want to be healthier.”		
“Less money, can’t afford to drink as much.”		
“Prayer and common sense.”		