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PREVALENCE AND PREDICTORS OF INCREASED AND HAZARDOUS ALCOHOL CONSUMPTION IN A COHORT OF OLDER SOUTH AUSTRALIAN MEN DURING COVID-19 RESTRICTIONS

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Abstract

Background: Increasing levels of risky alcohol consumption in older men observed in many countries, combined with trends for increased alcohol-related misuse by men during COVID, indicate a need to examine alcohol use by older men during the pandemic.

Aim: To examine the prevalence and predictors of increased and hazardous alcohol consumption in older South Australian men during COVID-19 restrictions.

Method: Data collected in the latest (eighth) wave of the Men Androgen Inflammation Lifestyle Environment and Stress (MAILES) cohort study were interrogated. Participants were 746 community-dwelling older men (mean age 69 years) who completed a self-report survey on mental health, coping, COVID-related worries, and alcohol consumption during pandemic restrictions. Alcohol-related items asked about changes to overall consumption (analysed as increased vs. decreased/same) and number of standard drinks per occasion (analysed as <5 drinks [not hazardous consumption] vs. 5+ drinks [hazardous]). Two hierarchical binary logistic regressions were conducted to explore predictors of increased and hazardous alcohol intake.

Results: Eight percent of men reported increased alcohol intake and nine percent reported hazardous alcohol consumption during COVID-19 restrictions. Being in a younger age group ('younger old'; OR=0.46, 95%CI=1.03, 2.28), having mild to severe depressive symptoms (OR=1.39, 95%CI=1.10, 5.05), and greater concern about becoming sick with COVID-19 (OR=1.52, 95%CI=1.03, 2.28) were predictive of increased alcohol consumption during restrictions. Younger age group (OR=0.46, 95%CI=0.34, 0.62) and greater concern about becoming sick with COVID-19 (OR=1.67, 95%CI=1.13, 2.51) were also predictive of hazardous alcohol consumption during this time.

Discussion: Men participating in longitudinal health study follow-ups may be less inclined to engage in unhelpful coping behaviours such as problematic alcohol use. Clinicians should regularly screen older men for

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risky alcohol consumption; a particular focus on screening ‘younger old’ men, those with more significant concerns around COVID-19, and those with depression symptoms may be warranted.

Keywords: older; men; cohort; alcohol; consumption; prevalence; predictors; COVID-19

BACKGROUND

Since SARS-CoV-2 (COVID-19) was declared a pandemic in March 2020, there have been over 570 million cases and over 6.4 million deaths worldwide.¹ Both the pandemic and government measures aiming to reduce transmission (e.g., stay-at-home orders, social restrictions) have increased many risk factors for poor mental health, including financial insecurity and fear, and reduced protective factors, including social connection and healthcare access.² There have been significant adverse effects on psychological health³; in the first year of COVID-19, the prevalence of depression and anxiety increased by 25% worldwide.⁴ Extensive literature links the increased use of alcohol as a coping mechanism in response to stressful events.^{5–10} Alcohol is well-established as harmful to health, increasing risks of premature death, morbidity, accidents, and injury, alcohol poisoning, intimate partner and family violence, and child maltreatment.¹¹ As such, early in the pandemic the World Health Organisation warned individuals not to use alcohol to deal with stress during this time and encouraged governments to implement bans or measures to limit the availability of alcohol during the pandemic.¹²

Many countries have reported changes in alcohol consumption during COVID-19. In the United Kingdom (UK), the number of people drinking at risky levels nearly doubled (4.8 million vs. 8.4 million) between February and September 2020.¹³ From March to September 2020, alcohol sales in the United States increased by 20% over the same period in 2019,¹⁴ and spending on alcohol increased in both high- and low-income Australian households between May 2020 and February 2021 compared to the previous year.¹⁵ A systematic review by Roberts et al.¹⁶ found that heterogeneous changes in alcohol use during COVID-19, with an overall trend towards

increased alcohol consumption. In meta-analyses, Acuff et al.¹⁷ (data from 58 countries; 128 studies) reported a nonsignificant average mean change in alcohol consumption that was moderated by country and gross domestic product per capita; 23% of participants reported increased intake, and 23% reported decreased intake. In analyses of European data (56 studies), Kilian et al.¹⁸ found that overall, more individuals reported decreases than increases in alcohol use, drinking frequency, quantity consumed, and heavy episodic drinking. However, among individuals with pre-existing problematic patterns of alcohol use, those problems often solidified or worsened. It is important to note that the majority of adults in many countries reported no increase in alcohol consumption during COVID-19. Emerging data suggest that changes in alcohol consumption during COVID-19 are more strongly influenced by sociodemographic and health factors, with particular groups appearing more vulnerable to increased alcohol use and misuse during the pandemic.

Men may be one such subpopulation. In non-pandemic times, men in many countries drink alcohol more often, are more likely to engage in hazardous drinking (defined as 5+ drinks per drinking occasion henceforth, also known as binge or heavy drinking¹⁹), and have higher rates of alcohol use disorders and alcohol-related hospitalisation than women.^{20–22} Being a man has also associated with higher rates of increased and hazardous alcohol use after natural disasters.^{9,23} During COVID-19, 10% to 36% of men across a number of studies self-reported increased alcohol consumption,^{24–27} and 22% of men in a large multi-region study self-reported hazardous alcohol consumption.²⁶ Men were also more likely than women to report increased alcohol consumption, hazardous alcohol consumption, increased solitary drinking, and increased home drinking during COVID-19.^{28–30}

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Many factors have been hypothesised to influence changes in men's alcohol use during stressful events. While men are less likely than women to be diagnosed with mental health conditions such as anxiety and depression using standard diagnostic criteria, they display higher levels of 'externalizing' mental health symptoms, including increased risk-taking and alcohol misuse.³¹ Having diagnosed depression has also been associated with hazardous drinking by men, outside of COVID-19.^{20,32} Age is another hypothesised influence, with Australian research during COVID finding that individuals 50–64 years old were more likely to report increased alcohol consumption than those aged 65+ years,³³ though this is yet to be explored in men. Reduced work hours or job loss, frequent causes of financial stress, have also been linked to increased alcohol consumption in men during this pandemic.^{15,33} While men's level of education has previously not been associated with their alcohol consumption,^{20,34} has not been explored in the context of COVID-19. Experiencing specific concerns about getting COVID-19 and the availability of personal coping resources (i.e., having helpful coping skills) are possible influences on men's alcohol use during the pandemic that have not been explored in populations of men.

Research on risky alcohol use in men has traditionally focused on younger men or men in general, while consumption by older men has received comparatively little attention. However, alcohol misuse and alcohol-related health issues are increasing in older individuals in many countries,^{35–38} and particularly amongst older men.^{38–40} Older people may be particularly vulnerable to a variety of negative alcohol-related consequences due to physiological changes associated with ageing, chronic conditions, and frailty. Interactions with medications may also lead to harmful alcohol-related effects at lower consumption levels.⁴¹ Given these issues and men's potential vulnerability to increased problematic alcohol consumption during COVID, a better understanding of alcohol use by older men is particularly needed. This study was a pragmatic attempt to adapt

an existing study to investigate an important men's health issue during an extreme period of time, aiming to examine the prevalence and predictors of increased and hazardous alcohol consumption in a cohort of older community-dwelling men during COVID-19 restrictions in South Australia.

METHOD AND DESIGN

Study design

Data were derived from the most recent wave of the longitudinal MAILES study. MAILES was established to harmonise data from two cohort studies – the Florey Adelaide Male Ageing Study (FAMAS) and a subset of age-matched participant men from the North-West Adelaide Health Study (NWAHS). MAILES participants are older, community-dwelling men from Adelaide's northern and western regions. Participants in the first wave (2002–2006, aged 35+ years at recruitment) were found to be representative of the population of this region.⁴² Data collection in this eighth wave focused mainly on experiences of COVID-19.

Procedure

MAILES cohort members were sent an email or mailed letter (if no email address was available) inviting their participation in a new questionnaire-based wave of the study. This message either contained a link to a website where participants could provide consent and complete the survey, or was mailed with a printed survey, consent form, and a reply-paid envelope. Data collection ran from October 2020 until the end of March 2021. The questionnaire was piloted at 25 minutes to complete. Non-respondents to the email invitation were sent a follow-up email to encourage participation, but those invited via postal mail did not receive further prompts due to a lack of resources for follow-up.

Measures

Changes in alcohol consumption

Participants were asked, 'Since the coronavirus/COVID-19 pandemic began in March, have you

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increased or decreased your overall alcohol consumption?’ with possible responses of ‘increased’, ‘decreased’, ‘stayed the same’, and ‘refused/don’t know’. Responses were dichotomised for analysis into ‘increased consumption’ and ‘decreased consumption/stayed the same’.

Hazardous alcohol consumption

The number of drinks consumed per drinking occasion was assessed by the question, ‘On a day that you have an alcoholic drink, how many standard drinks do you usually have?’ Possible responses were ‘9 or more’, ‘5 to 8’, ‘3 to 4’, ‘2’, and ‘1’ drink per day. Responses were dichotomised for analysis as per NHMRC⁴³ guidelines as either ‘<5 drinks per occasion’ (not hazardous consumption) or ‘5+ drinks per occasion’ (hazardous consumption).

Demographic variables

Age at survey completion was calculated using participants’ date of birth provided at study enrolment. For analysis, ages were categorised in 10-year increments: 50-59, 60-69, 70-79, and 80+ years. Participants also provided their highest education level as either ‘primary school’, ‘high school’, ‘TAFE/apprenticeship’ (i.e., vocational training), ‘trade certificate/diploma’, or ‘bachelor’s degree or above’.

Depression

Depression symptoms were assessed in NWAHS participants using the 20-item Centre for Epidemiological Studies Depression Scale⁴⁴ (CES-D; $\alpha=0.85$), while FAMAS participants completed the 21-item Beck Depression Inventory⁴⁵ (BDI; $\alpha=0.94$). Both questionnaires demonstrate ‘robust agreement’ in the detection of clinical depression.⁴⁶ To harmonise responses across the two cohorts for analysis, total scores were dichotomised using established cut-offs into ‘no or minimal symptoms’ (<16 on the CES-D and <10 on the BDI) and ‘mild to severe symptoms’ (16+ on the CES-D and 10+ on the BDI).⁴⁷

Anxiety

Anxiety symptoms in the last two weeks were assessed using the established 7-item Generalised Anxiety Disorder questionnaire⁴⁸ ($\alpha=0.79$), with responses on a 4-point Likert scale from ‘not at all’ to ‘nearly every day’. Total scores were categorised using established symptom cut-offs: ‘none’ (score 0-4), ‘mild’ (5-9), and ‘moderate to severe’ (10+).

COVID-related change in financial position

Financial position change was measured via the bespoke question, ‘As a result of COVID-19, has your financial position changed?’ with possible responses of ‘yes, a lot worse’, ‘yes, slightly worse’, ‘yes, slightly better’, ‘yes, a lot better’ and ‘no, stayed the same’. As the response of interest was a worse financial position, the first two responses were re-categorised into ‘worse financial position’ and the last three were combined into ‘better financial position/stayed the same’ for analyses.

Concern about getting sick with COVID-19

Participants were asked two questions about COVID-related concerns, ‘Since the COVID-19 outbreak began, how concerned have you been that you would get sick with COVID-19?’ and ‘Since the COVID-19 outbreak began, how concerned have you been that a family member will be infected with COVID-19?’ Responses to each item were provided on a 5-point Likert scale from ‘not at all concerned’ to ‘extremely concerned’.

Resilient coping tendencies

The 4-item Brief Resilient Coping Scale⁴⁹ (BRCS; $\alpha=0.84$) was used to measure “tendencies to cope with stress in a highly adaptive manner”. Answers to each item were made on a 5-point Likert scale from ‘does not describe me at all’ to ‘describes me very well’. Total scores were categorised as ‘low’ (score 4–13), ‘medium’ (14–16), and ‘high’ (17–20) for analysis, as per previous studies.⁵⁰ The BRCS has been validated in a general population sample.⁵¹

Data analyses

Data were analysed using R version 4.1.1.⁵² As initial data exploration showed missing data rates of 14–15% in the two alcohol use outcome variables, multiple imputation was conducted using the MICE package,⁵³ with 50 regression models produced based on the existing data, and then pooled to generate a dataset including imputed values. Following imputation, descriptive statistics were generated for all included variables. Potential multicollinearity was assessed via a correlation matrix, and further assumption testing (homogeneity of variance, influential observation testing, and variance inflation factor testing) for independent predictor variables was conducted. Assumptions were met, though ‘concern about oneself getting sick with COVID-19’ and ‘concern about family getting sick with COVID-19’ did approach the threshold for multicollinearity ($r=0.74$). Next, two hierarchical logistic regressions were conducted to analyse the impact of predictor variables on (1) change in alcohol consumption and (2) hazardous alcohol consumption. Without any theoretical basis for entering predictors in separate blocks, in each regression the following predictors were added in a single block: age group, highest education level, depression symptoms, anxiety symptoms, change in financial position, concern about oneself getting COVID, concern about family getting COVID, and resilient coping tendencies. Statistics were considered significant at $p<0.05$.

ETHICAL CONSIDERATIONS

Approval for the latest MAILES wave was granted by the University of Adelaide Human Research Ethics Committee (H-2020-109). All participants provided written informed consent.

RESULTS

Participant data

Participant data is presented in Table 1. The participants comprised 746 men who were an

TABLE 1. Participant Data (N=746).

Variable	n (%)
Age group	
50-59 years	128 (17%)
60-69 years	249 (33%)
70-79 years	254 (34%)
80+ years	115 (15%)
Highest education	
Primary school	32 (4%)
High school	260 (35%)
TAFE/apprenticeship	44 (6%)
Trade certificate or diploma	272 (37%)
Bachelor’s degree or higher	138 (19%)
Depression symptoms	
None or minimal	625 (84%)
Mild to severe	121 (16%)
Anxiety symptoms	
None	602 (81%)
Mild	93 (13%)
Moderate to severe	51 (7%)
Resilient coping tendencies	
Low	305 (41%)
Moderate	329 (44%)
High	82 (11%)
Financial position change because of COVID-19	
Worse	184 (25%)
Better or same	562 (75%)
Concern about oneself getting sick with COVID-19	
Not at all	172 (23%)
A little	352 (47%)
Moderately	152 (20%)
Very	53 (7%)
Extremely	17 (2%)
Concern about family getting sick with COVID-19	
Not at all	135 (18%)
A little	305 (41%)
Moderately	180 (24%)
Very	90 (12%)
Extremely	25 (3%)

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average of 69 years old (range 50–94 years). Most reported a highest education level as a trade certificate or diploma (37%). One in every six (16%) had mild or greater depression symptoms, and one in every five (20%) reported mild or greater anxiety symptoms. Four in every ten participants (41%) had low resilient coping tendencies. One-quarter (25%) reported that their financial position had worsened due to COVID-19. Almost one-third (29%) reported moderate or greater concern that they would get sick with COVID-19, while slightly more (39%) were worried about this happening to their family.

Increased and hazardous alcohol consumption by men during COVID-19

Approximately one in every 12 participants reported that their alcohol consumption had increased (8%, n=60) and/or that they had engaged in hazardous drinking levels (9%, n=65) during COVID-19 restrictions.

Predictors of increased alcohol consumption by men during COVID-19

Tables 2 and 3 illustrates the regression analysis exploring predictors of men's self-reported

TABLE 2. Hierarchical Logistic Regression Predicting Self-Reported Increased Alcohol Consumption In Older Men During COVID-19 (N=746).

Variable	b (SE)	OR (95%CI)
Age group	-0.78 (0.16)	0.46*** (0.33, 0.62)
Highest education	0.05 (0.12)	1.05 (0.84, 1.32)
Depression symptoms	0.87 (0.39)	2.39* (1.10, 5.05)
Anxiety symptoms	0.07 (0.25)	1.07 (0.65, 1.73)
Change in financial position	0.16 (0.31)	1.17 (0.65, 2.20)
Concern for oneself getting COVID-19	0.42 (0.20)	1.52* (1.03, 2.28)
Concern for family getting COVID-19	-0.06 (0.19)	0.94 (0.65, 1.34)
Resilient coping tendencies	0.01 (0.21)	1.01 (0.67, 1.52)
Model summary: R²=0.14		

95%CI, 95% confidence interval; OR, odds ratio; R², Nagelkerke's pseudo R².

*p<.05. ***p<.001

TABLE 3. Hierarchical Logistic Regression Predicting Hazardous Alcohol Consumption (5+ Drinks Per Occasion) In Older Men During COVID-19 (N=746).

Variable	b (SE)	OR (95%CI)
Age group	-0.77 (0.16)	0.46*** (0.34, 0.62)
Highest education	-0.15 (0.11)	0.86 (0.69, 1.07)
Depression symptoms	0.39 (0.41)	1.48 (0.65, 3.27)
Anxiety symptoms	0.11 (0.26)	1.11 (0.66, 1.82)
Change in financial position	0.58 (0.33)	1.79 (0.96, 3.56)
Concern for oneself getting COVID-19	0.51 (0.20)	1.67* (1.13, 2.51)
Concern for family getting COVID-19	-0.19 (0.19)	0.83 (0.57, 1.19)
Resilient coping tendencies	0.19 (0.20)	1.21 (0.81, 1.79)
Model summary: R²=0.11		

95%CI, 95% confidence interval; OR, odds ratio; R², Nagelkerke's pseudo R².

*p<.05. ***p<.001

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increases in alcohol consumption during COVID-19. The model explained 14% of the variance ($R^2=0.14$), with age group, depression symptoms, and concern about oneself getting COVID-19 predicting increased alcohol intake. For each increase in the age group category, men were 54% less likely to report increased alcohol consumption ($OR=0.46$, $95\%CI=0.33, 0.62$, $p<0.001$). In addition, men with mild to severe depressive symptoms were 139% more likely to report increased alcohol consumption during COVID-19 than those with no or minimal symptoms ($OR=2.39$, $95\%CI=1.10, 5.05$, $p<0.05$). Finally, for every category increase in concern about getting sick with COVID-19, men were 52% more likely to report increased alcohol intake ($OR=1.52$, $95\%CI=1.03, 2.28$, $p<0.05$).

Predictors of hazardous alcohol use by men during COVID-19

Results of the regression exploring predictors of men's self-reported hazardous alcohol consumption during COVID-19 are in Table 3. The model explained 11% of the total variance ($R^2=0.11$), and age group and concern for oneself getting COVID-19 were significant predictors. With every increase in age group category, men were 54% less likely to report hazardous alcohol consumption ($OR=0.46$, $95\%CI=0.34, 0.62$, $p<0.001$), and for every category increase in concern about getting sick with COVID-19, men were 67% more likely to self-report hazardous alcohol consumption.

DISCUSSION

Evidence of increasing misuse of alcohol in older men, combined with trends for exacerbation of alcohol-related misuse during COVID, indicates a need to examine alcohol use by men in this age group during the pandemic. This study represents a pragmatic adaptation of an existing cohort study to investigate the prevalence and predictors of increased and hazardous alcohol intake during COVID-19 restrictions in a large cohort of older-aged community-based men in South Australia.

The participants were 746 men who were an average of 69 years old, most of whom had the highest high school (35%) or trade (37%) education. One in every six had mild, or greater depression symptoms, one in five had mild or greater anxiety symptoms, and a high proportion (41%) had low resilient coping tendencies. Eight percent reported their alcohol consumption increased, and 9% said they had engaged in hazardous drinking levels during COVID-19 restrictions. Being in a younger age group in this sample ('younger old') and feeling greater concern about oneself getting sick with COVID-19 were predictive of both increased and hazardous alcohol consumption. In addition, having mild or greater depressive symptoms were predictive of increased alcohol intake.

The rates of increased and hazardous alcohol consumption in our sample of older men were lower than reported in general adult samples during the pandemic (10–36% increased, 22% hazardous). They also varied from those in other samples of older adults: in a UK sample, 15% of individuals aged 55+ years reported drinking more during,⁵⁴ and in American adults 50-80 years old,⁵⁵ rates of hazardous drinking were slightly lower (6%) than in our sample, while rates of increased drinking were slightly higher (14%). Our hazardous drinking rate was also lower than that seen in Australian government data⁵⁶ on older men that was also collected during COVID-19, in which 25% of men aged 55-64 years and 16% of men aged 65+ years reported having consumed 5+ drinks on any day in the past year, at least monthly. The reported lower rate of risky alcohol consumption in this study may be partially explained by the less severe social restrictions and shorter lockdowns experienced in South Australia (compared to other locations) resulting in fewer negative mental health impacts,⁵⁷ and therefore less demand for coping strategies such as alcohol consumption. Future research will be useful to investigate this theory using data from people living in locations that experienced different levels of COVID-19 restrictions. Additionally, our sample consisted of men who had participated in multiple

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waves (this being the eighth) of a health-related cohort study for up to 18 years. The tendency to drop out of cohort study follow-ups has been suggested to be an even greater problem than initial non-participation, because the choice of whether to drop out or continue in a study may be influenced by participants experiencing (or not experiencing) an outcome of interest.⁵⁸ Substance use, including risky alcohol consumption, has been identified as an important predictor of attrition from many longitudinal studies.^{59–64} The men in this study may be more likely to be invested and interested in their health, as indicated by their ongoing commitment to participation. Such interest and commitment may be another explanation for the low levels of risky alcohol consumption seen in this sample. In addition, the men in this study predominantly lived in urban areas may have influenced our results, as men in rural and remote areas of Australia are more likely than those in major cities to drink at risky levels.^{65,66}

Our finding that being ‘younger old’ was predictive of increased and hazardous alcohol consumption is consistent with previous mixed-gender Australian findings. In a sample aged 60+ years, Jiang et al.³⁹ found that individuals who were men and younger (i.e., 60–69 years) were more likely to report risky drinking than those who were older aged. In a study by Neill et al.,³³ participants aged 25 to 64 years were more likely than those aged 18 to 24 and those 65+ years to report an increase in alcohol consumption during COVID-19. It has been theorised that adults before retirement may be under greater socioeconomic pressures, while those in younger and older age groups have experienced fewer COVID-related disruptions to their finances and lives.³³ In our sample, specific concern about oneself getting sick with COVID-19 was also predictive of both increased and hazardous alcohol intake by men, though generalised anxiety symptoms (consistent with previous studies^{24,33}) and concern about family members getting sick with COVID were not. The association between more significant anxiety related to getting sick with

COVID and risky alcohol use may be less associated with fear of any negative COVID-related health consequences and more about a fear of not being able to work if they are infected for many men. Despite their greater risk of COVID-related morbidity and mortality, men are less concerned about COVID-related health-related consequences than women but are more concerned about potential negative financial consequences of the pandemic such as job loss and decreased income.⁶⁷ Further, Australians aged 55–64 years in the workforce and coming to retirement report greater fear about their finances because of COVID-19 than those aged 65+ years.⁶⁸ This worry may also play into traditional social norms and masculine beliefs of men as autonomous providers for their families, leading to stress and anticipated consequences such as social stigma if a man does not fulfil this role.⁶⁹ In our sample, worsened financial position due to COVID was not a predictor of alcohol misuse. This requires further investigation; however, it may be that this reduced income was most often related to changes to family members’ income rather than a reduction in income from participant men, reducing the personal impact of this event. Individuals in our sample who are younger and thus potentially more likely to still be in the workforce and have significant personal responsibilities (e.g., children, mortgage) may be more vulnerable to stressors that have the potential to negatively affect their financial position than those who are older and retired. While not directly predictive of risky alcohol consumption in this study, it is notable that a high proportion (41%) of men in our sample had low/poor adaptive coping tendencies, which has been shown to moderate the relationship between the stressor and coping behaviour.⁷⁰

This study was strengthened by the participation of a large cohort of older men and the inclusion of several validated measures. However, the findings should be considered in the context of several limitations. Survey research is inherently limited by its reliance on self-report. Data accuracy was dependent on participants accurately self-assessing and

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disclosing information about sensitive topics, including alcohol consumption and mental ill-health, that are particularly susceptible to inaccuracy and minimising due to shame and social desirability bias.^{71,72} While this may have been somewhat mitigated by anonymous responses to this study, these data should be interpreted with some caution.

Further, while several significant predictors were identified, only a relatively small portion of the sample reported risky alcohol intake, and the two regression models explained only a relatively small amount of the variance in men's increased (14%) and hazardous alcohol consumption (11%). Work is needed to identify additional factors predictive of older men's problematic alcohol use during stressful events such as COVID-19 restrictions. This was also a sample of predominantly white, urban-dwelling men (data not presented). With one-third of the Australian population residing in a rural location⁶⁵ and almost one-quarter speaking a language other than English at home,⁷³ the findings of this study are unlikely to be generalisable to more diverse samples of older men. Future studies would benefit from investigating, in sociodemographically diverse samples, issues including how often older men engage in hazardous drinking, the total amounts of alcohol they consume per week, and the impacts of variables including living in a rural or remote area, income, ethnicity, employment status, relationship status, and social isolation. While individual-level data will likely assist in identifying further subpopulations of older men who may be at greater risk of risky alcohol consumption, Roche et al.⁷⁴ recommend that interventions aiming to reduce alcohol-related harms among targeted populations should aim to address multiple social determinants of problematic alcohol use including socioeconomic, political, and cultural factors, daily living conditions, ease of access to alcohol, and individual health-related factors. The follow-up to this study is also needed to understand potential changes to our findings as COVID restrictions ease and life returns closer to 'normal' in many parts of the world; this

will be necessary to understand the need for interventions targeted towards older-aged men going forwards. Data following other disasters and pandemics^{75, 76} suggest that increased levels of risky alcohol consumption during COVID-19 may take some time to decrease after the pandemic is 'over'.

The findings of this study have potential implications for the care of older men during COVID. The Substance Abuse and Mental Health Services Administration recommends that all older adults be routinely screened for problematic alcohol use using an appropriate standardised screening tool at least annually.⁷⁷ With one in twelve men in our sample reporting increased or hazardous alcohol intake, our results support this recommendation concerning older men during this pandemic. Within this demographic of older men, attention may be particularly warranted toward regular screening 'younger old' men, those experiencing depressive symptoms, and those concerned about getting sick with COVID. While the shame and embarrassment commonly felt by older adults with alcohol problems⁷⁰ can act as a barrier to help-seeking,⁷⁸ 86% of men aged 55–64 years, 93% aged 65–74 years, 97% aged 75–84 years, and 95% aged 85+ years see a general practitioner (family physicians in some countries) at least annually.⁷⁹ As such, primary care may be an effective setting for regular assessment of older men's alcohol use, and, if indicated, early intervention or referral to specialist providers.

Older people may have specific needs in alcohol-related healthcare consultations, including needing longer and more consultations than younger individuals, a need to adapt assessment and communication due to age-related comorbidities such as cognitive and memory impairment, and including discussion of the particular impacts of alcohol misuse for the older individual including on finances, social interactions, and physical and mental health.^{80,81} Older people may struggle to recognise potential alcohol-related risks or see benefits in reducing potential risks unless these are perceived as personally relevant to the individual's health concerns.⁸² Brief clinician interventions that include

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opportunistic counselling, information, advice to motivate behaviour change, and follow-up can result in changes to alcohol-related behaviour and are viable treatment options for most older alcohol users who do not require formal intervention.^{36,83} However, general practitioners face barriers, including time pressures, practitioner shortages, and the need to address multiple pressing health concerns that frequently limit their capacity to address alcohol use with older people. Given these barriers, practice nurses – who are often experienced in assessment, preventive care, and brief interventions – may be well-positioned to support or carry out these activities concerning older men’s alcohol use.⁸⁴ In Australia, almost two-thirds (64%) of alcohol and other drug services clients receiving alcohol treatments are male,⁸⁵ suggesting these services may be particularly accessible for men. Practitioners and services such as these specialised alcohol services, mental health practitioners, community-based programs, and support groups may play important roles in caring for older men engaging in problematic alcohol use; however, little is known about the appeal and efficacy of these avenues for older men. Further research into engaging, accessible, effective avenues for alcohol-related care for older men is needed. Online screening and intervention may be effective, though qualitative data from older adults undergoing alcohol treatment during COVID-19 suggest a strong preference for face to face services and low engagement with remote and online support in this population.⁸⁶

CONCLUSION

In this pragmatic adaptation of an existing cohort study to investigate an important men’s health issue, approximately one in every twelve older men reported increased or hazardous alcohol consumption during COVID restrictions. Our results suggest that older men participating in later waves of longitudinal health studies may be less inclined to engage in unhealthy coping behaviours such as risky alcohol consumption. Clinicians

should regularly screen older men for problematic alcohol use, and particular focus may be warranted for screening in ‘younger old’ men, those experiencing depressive symptoms, and those concerned about getting sick with COVID-19. The longer-term impacts of COVID-19 on older men’s alcohol use remain to be seen.

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REFERENCES

1. World Health Organisation. WHO coronavirus (COVID-19) dashboard. 2022. Available from: <https://covid19.who.int/>
2. OECD. Tackling the mental health impact of the COVID-19 crisis: An integrated, whole-of-society response; 2021.
3. Ellison JM, Semlow AR, Jaeger EC, et al. COVID-19 and MENTal health: Addressing men’s mental health needs in the digital world. *American Journal of Men’s Health*. 2021;15:155798832110300. <http://dx.doi.org/10.1177/15579883211030021>
4. World Health Organisation. COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide. 2022. Available from: www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide
5. Clay JM, Parker MO. Alcohol use and misuse during the COVID-19 pandemic: A potential public health crisis? *The Lancet*. 2020;5(5):E259. [http://dx.doi.org/10.1016/S2468-2667\(20\)30088-8](http://dx.doi.org/10.1016/S2468-2667(20)30088-8)
6. Leonard KE, Rothbard JC. Alcohol and the marriage effect. *Journal of Studies on Alcohol*.

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 International License. © Nankivell ME, et al.

- 1999;13:139–46. <http://dx.doi.org/10.15288/jsas.1999.s13.139>
7. Mulia N, Zemore SE, Murphy R, et al. Economic loss and alcohol consumption and problems during the 2008 to 2009 U.S. recession. *Alcohol: Clinical and Experimental Research*. 2014;38(4):1026–34. <http://dx.doi.org/10.1111/acer.12301>
 8. Hasin DS, Keyes KM, Hatzenbuehler ML, et al. Alcohol consumption and posttraumatic stress after exposure to terrorism: Effects of proximity, loss, and psychiatric history. *American Journal of Public Health*. 2007;97(12):2268–75. <http://dx.doi.org/10.2105/AJPH.2006.100057>
 9. Cerdá M, Tracy M, Galea S. A prospective population based study of changes in alcohol use and binge drinking after a mass traumatic event. *Drug and Alcohol Dependence*. 2011;115(1–2):1–8. <http://dx.doi.org/10.1016/j.drugalcdep.2010.09.011>
 10. Vijayasiri G, Richman JA, Rospenda KM. The Great Recession, somatic symptomatology and alcohol use and abuse. *Addictive Behaviours*. 2012;37(9):1019–24. <http://dx.doi.org/10.1016/j.addbeh.2012.04.007>
 11. OECD. The effect of COVID-19 on alcohol consumption, and policy responses to prevent harmful alcohol consumption. 2021. Available from: www.oecd.org/coronavirus/policy-responses/the-effect-of-covid-19-on-alcohol-consumption-and-policy-responses-to-prevent-harmful-alcohol-consumption-53890024/
 12. World Health Organisation Regional Office for the Eastern Mediterranean. Alcohol does not protect against COVID-19 and its access should be restricted during lock down. 2020. Available from: www.emro.who.int/mnh/news/alcohol-does-not-protect-against-covid-19-and-its-access-should-be-restricted-during-lock-down.html
 13. Royal College of Psychiatrists. Addiction services not equipped to treat the 8 million people drinking at high risk during pandemic, warns Royal College. 2020. Available from: www.rcpsych.ac.uk/news-and-features/latest-news/detail/2020/09/14/addiction-services-not-equipped-to-treat-the-8-million-people-drinking-at-high-risk-during-pandemic-warns-royal-college
 14. Castaldelli-Maia JM, Segura LE, Martins SS. The concerning increasing trend of alcohol beverage sales in the U.S. during the COVID-19 pandemic. *Alcohol*. 2021;96:37–42. <http://dx.doi.org/10.1016/j.alcohol.2021.06.004>
 15. Biddle N, Edwards B, Gray M, et al. Alcohol consumption during the COVID-19 period: May 2020; 2020.
 16. Roberts A, Rogers J, Mason R, et al. Alcohol and other substance use during the COVID-19 pandemic: A systematic review. *Drug and Alcohol Dependence*. 2021;229:109150. <http://dx.doi.org/10.1016/j.drugalcdep.2021.109150>
 17. Acuff SF, Strickland JC, Tucker JA, et al. Changes in alcohol use during COVID-19 and associations with contextual and individual difference variables: A systematic review and meta-analysis. *Psychology of Addictive Behaviours*. 2022;36(1):1–19. <http://dx.doi.org/10.1037/adb0000796>
 18. Kilian C, O'Donnell A, Potapova N, et al. Changes in alcohol use during the COVID-19 pandemic in Europe: A meta-analysis of observational studies. *Drug and Alcohol Review*. 2022;42(4):918–31. <http://dx.doi.org/10.1111/dar.13446>
 19. National Institute on Alcohol Abuse and Alcoholism. Drinking levels defined. Available from: www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking
 20. Bosque-Prous M, Brugal MT, Lima KC, et al. Hazardous drinking in people aged 50 years or older: A cross-sectional picture of Europe, 2011–2013. *International Journal of Geriatric Psychiatry*. 2017;32(8):817–28. <http://dx.doi.org/10.1002/gps.4528>
 21. Chen CM, Yoon Y. Trends in alcohol-related morbidity among community hospital discharges, United States, 2000–2014. Bethesda, MD: National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism; 2017.
 22. Kanny D, Naimi TS, Liu Y, et al. Annual total binge drinks consumed by U.S. adults, 2015. *American Journal of Preventive Medicine*. 2018;54(4):486–96. <http://dx.doi.org/10.1016/j.amepre.2017.12.021>
 23. Nordløyken A, Pape H, Wentzel-Larsen T, et al. Changes in alcohol consumption after a natural disaster: A study of Norwegian survivors after the 2004 Southeast Asia tsunami. *BMC Public Health*. 2013;13:58. <http://dx.doi.org/10.1186/1471-2458-13-58>

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 International License. © Nankivell ME, et al.

24. Jacob L, Smith L, Armstrong NC, et al. Alcohol use and mental health during COVID-19 lockdown: A cross-sectional study in a sample of UK adults. *Drug and Alcohol Dependence*. 2021; 219:108488. <http://dx.doi.org/10.1016/j.drugalcdep.2020.108488>
25. Ritter A, Wilkinson C, Vuong T, et al. Distilling our changing relationship with alcohol during COVID-19. Sydney: UNSW Social Policy Research Centre; 2020.
26. Winstock A, Zhuparris A, Gilchrist G, et al. GDS COVID-19 special edition: Key findings report, Global Drug Survey; 2020.
27. Australian Bureau of Statistics. Household impacts of COVID-19 survey, May 2021. 2021. Available from: www.abs.gov.au/statistics/people/people-and-communities/household-impacts-covid-19-survey/may-2021
28. Davies EL, Puljevic C, Gilchrist G, et al. Impacts of changes in alcohol consumption patterns during the first 2020 COVID-19 restrictions for people with and without mental health and neurodevelopmental conditions: A cross sectional study in 13 countries. *International Journal of Drug Policy*. 2022;101:103563. <http://dx.doi.org/10.1016/j.drugpo.2021.103563>
29. Wardell JD, Kempe T, Rapinda KK, et al. Drinking to cope during the COVID-19 pandemic: The role of external and internal factors in coping motive pathways to alcohol use, solitary drinking, and alcohol problems. *Alcoholism: Clinical and Experimental Research*. 2020;44(10):2073–83. <http://dx.doi.org/10.1111/acer.14425>
30. Callinan S, Mojica-Perez Y, Wright CJC, et al. Purchasing, consumption, demographic and socio-economic variables associated with shifts in alcohol consumption during the COVID-19 pandemic. *Drug and Alcohol Review*. 2021;40(2):183–91. <http://dx.doi.org/10.1111/dar.13200>
31. Zajac IT, Rice S, Proeve M, et al. Suicide risk, psychological distress and treatment preferences in men presenting with prototypical, externalising and mixed depressive symptomology. *Journal of Mental Health*. 2022;31(3):309–16. <http://dx.doi.org/10.1080/09638237.2020.1755026>
32. Nolen-Hoeksema S. Gender differences in risk factors and consequences for alcohol use and problems. *Clinical Psychology Review*. 2004;24(8): 981–1010. <http://dx.doi.org/10.1016/j.cpr.2004.08.003>
33. Neill E, Meyer D, Toh WL, et al. Alcohol use in Australia during the early days of the COVID-19 pandemic: Initial results from the COLLATE project. *Psychiatry and Clinical Neurosciences*. 2020; 74(10):542–9. <http://dx.doi.org/10.1111/pcn.13099>
34. Trias-Llimós S, Bosque-Prous M, Obradors-Rial N, et al. Alcohol and educational inequalities: Hazardous drinking prevalence and all-cause mortality by hazardous drinking group in people aged 50 and older in Europe. *Substance Abuse*. 2022; 43(1):152–60. <http://dx.doi.org/10.1080/08897077.2020.1773597>
35. Iparraguirre J. Socioeconomic determinants of risk of harmful alcohol drinking among people aged 50 or over in England. *BMJ Open*. 2015;5: e007684. <http://dx.doi.org/10.1136/bmjopen-2015-007684>
36. Roche AM, Kostadinov V. Baby boomers and booze: we should be worried about how older Australians are drinking. *Medical Journal of Australia*. 2019;210(1):38–9. <http://dx.doi.org/10.5694/mja2.12025>
37. Grant BF, Chou SP, Saha TD, et al. Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001-2002 to 2012-2013: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *JAMA Psychiatry*. 2017;74(9):911–23. <http://dx.doi.org/10.1001/jamapsychiatry.2017.2161>
38. Hallgren MÅ, Högberg P, Andréasson S. Alcohol consumption and harm among elderly Europeans: falling between the cracks. *European Journal of Public Health*. 2010;20(6):616–7. <http://dx.doi.org/10.1093/eurpub/ckq111>
39. Jiang H, Griffiths S, Callinan S, et al. Prevalence and sociodemographic factors of risky drinking in Australian older adults. *Drug and Alcohol Review*. 2020;39(6):684–93. <http://dx.doi.org/10.1111/dar.13122>
40. Wang Q, Zhang Y, Wu C. Alcohol consumption and associated factors among middle-aged and older adults: results from China Health and Retirement Longitudinal Study. *BMC Public Health*. 2022;22:322. <http://dx.doi.org/10.1186/s12889-022-12718-8>

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 International License. © Nankivell ME, et al.

41. Royal College of Psychiatrists. Alcohol and older people. 2015 [cited 2022 5 August]. Available from: www.rcpsych.ac.uk/mental-health/problems-disorders/alcohol-and-older-people
42. Grant JF, Martin SA, Taylor AW, et al. Cohort profile: The Men Androgen Inflammation Lifestyle Environment and Stress (MAILES) study. *International Journal of Epidemiology*. 2014;43(4): 1040–53. <http://dx.doi.org/10.1093/ije/dyt064>
43. National Health and Medical Research Council. Australian guidelines to reduce health risks from drinking alcohol. Canberra: NHMRC; 2020.
44. Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1(3):385–401. <http://dx.doi.org/10.1177/014662167700100306>
45. Beck AT, Ward CT, Mendelson M, et al. An inventory for measuring depression. *Archives of General Psychiatry*. 1961;4:561–71. <http://dx.doi.org/10.1001/archpsyc.1961.01710120031004>
46. Shafer AB. Meta-analysis of the factor structures of four depression questionnaires: Beck, CES-D, Hamilton, and Zung. *Journal of Clinical Psychology*. 2006;62(1):123–46. <http://dx.doi.org/10.1002/jclp.20213>
47. Smarr KL, Keefer AL. Measures of depression and depressive symptoms: Beck Depression Inventory-II (BDI-II), Center for Epidemiologic Studies Depression Scale (CES-D), Geriatric Depression Scale (GDS), Hospital Anxiety and Depression Scale (HADS), and Patient Health Questionnaire-9 (PHQ-9). *Arthritis Care Research*. 2011;63:S454–S66. <http://dx.doi.org/10.1002/acr.20556>
48. Spitzer RL, Kroenke K, Williams JBW, et al. A brief measure for assessing generalised anxiety disorder. *Archives of Internal Medicine*. 2006; 166(10):1092. <http://dx.doi.org/10.1001/archinte.166.10.1092>
49. Sinclair VG, Wallston KA. The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*. 2004;11(1):94–101. <http://dx.doi.org/10.1177/1073191103258144>
50. Rahman MA, Hoque N, Alif S, et al. Factors associated with psychological distress, fear, and coping strategies during the COVID-10 pandemic in Australia. *Globalisation and Health*. 2020;16:95. <http://dx.doi.org/10.1186/s12992-020-00624-w>
51. Kocalevent R, Zenger M, Hinz A, et al. Resilient coping in the general population: Standardisation of the Brief Resilient Coping Scale (BRCS). *Health and Quality of Life Outcomes*. 2017;15:251. <http://dx.doi.org/10.1186/s12955-017-0822-6>
52. Team RC. R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing; 2021.
53. van Buuren S, Groothuis-Oudshoorn K. mice: Multivariate Imputation by Chained Equations in R. *Statistical Software*. 2011;45(3):1–67. <http://dx.doi.org/10.18637/jss.v045.i03>
54. Drinkaware. Drinkaware warns lockdown level drinking could have lasting impact. 2020. Available from: www.drinkaware.co.uk/news/drinkaware-warns-lockdown-level-drinking-could-have-lasting-impact
55. Fernandez A, Kullgren J, Malani P, et al. Alcohol use among older adults: National Poll on Healthy Ageing. 2021. Available from: <http://dx.doi.org/10.7302/1328>
56. Australian Bureau of Statistics. Alcohol consumption, 2020–2021. 2022 [cited 2022 6 August]. Available from: www.abs.gov.au/statistics/health/health-conditions-and-risks/alcohol-consumption/latest-release
57. Butterworth P, Schurer S, Trinh TA, et al. Effect of lockdown on mental health in Australia: Evidence from a natural experiment analysing a longitudinal probability sample survey. *The Lancet Public Health*. 2022;7(5):e427–e36. [http://dx.doi.org/10.1016/S2468-2667\(22\)00082-2](http://dx.doi.org/10.1016/S2468-2667(22)00082-2)
58. Grimes DA, Schulz KF. Cohort studies: Marching towards outcomes. *Lancet*. 2002;359(9303):341–5. [http://dx.doi.org/10.1016/S0140-6736\(02\)07500-1](http://dx.doi.org/10.1016/S0140-6736(02)07500-1)
59. Delfabbro P, Winefield H, Winefield A, et al. Factors associated with attrition in a 10-year longitudinal study of young people: Implications for studies of employment in school leavers. *Australian Psychologist*. 2017;52:41–51. <http://dx.doi.org/10.1111/ap.12207>
60. Keyes KM, Jager J, Platt J, et al. When does attrition lead to biased estimates of alcohol consumption? Bias analysis for loss to follow-up in 30 longitudinal cohorts. *International Journal of*

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 International License. © Nankivell ME, et al.

- Methods in Psychiatric Research. 2020;29(4):1–9. <http://dx.doi.org/10.1002/mpr.1842>
61. McCoy TP, Ip EH, Blocker JN, et al. Attrition bias in a U.S. internet survey of alcohol use among college freshmen. *Journal of Studies on Alcohol and Drugs*. 2009;70(4):606–14. <http://dx.doi.org/10.15288/jsad.2009.70.606>
 62. Osler M, Kriebbaum M, Christensen U, et al. Rapid report on methodology: Does loss to follow-up in a cohort study bias associations between early life factors and lifestyle-related health outcomes? *Annals of Epidemiology*. 2008;18(5):422–4. <http://dx.doi.org/10.1016/j.annepidem.2007.12.008>
 63. Thygesen LC, Johansen C, Keiding N, et al. Effects of sample attrition in a longitudinal study of the association between alcohol intake and all-cause mortality. *Addiction*. 2008;103(7):1149–59. <http://dx.doi.org/10.1111/j.1360-0443.2008.02241.x>
 64. Zhao J, Stockwell T, Macdonald S. Non-response in alcohol and drug population surveys. *Drug and Alcohol Review*. 2009;28(6):648–57. <http://dx.doi.org/10.1111/j.1465-3362.2009.00077.x>
 65. National Rural Health Alliance. Alcohol use in rural Australia; 2014.
 66. Australian Institute of Health and Welfare. Alcohol and other drug use in regional and remote Australia: Consumption, harms, and access to treatment 2016–17. Canberra: AIHW; 2019.
 67. Alsharawy A, Spoon R, Smith A, et al. Gender differences in fear and risk perception during the COVID-19 pandemic. *Frontiers in Psychology*. 2021;12:689467. <http://dx.doi.org/10.3389/fpsyg.2021.689467>
 68. Lowies B, Kutin J, Russell R, et al. The psychological wellbeing and financial decision-making of older Australians in times of uncertainty. Adelaide, Australia: University of South Australia; 2022.
 69. Reidy DE, Berke DS, Gentile B, et al. Man enough? Masculine discrepancy stress and intimate partner violence. *Personality and Individual Differences*. 2014;68:160–4. <http://dx.doi.org/10.1016/j.paid.2014.04.021>
 70. Cooper ML, Russell M, Skinner JB, et al. Stress and alcohol use: Moderating effects of gender, coping, and alcohol expectancies. *Journal of Abnormal Psychology*. 1992;101(1):139–52. <http://dx.doi.org/10.1037/0021-843x.101.1.139>
 71. Caputo A. Social desirability bias in self-reported well-being measures: Evidence from an online survey. *Universitas Psychologica*. 2017;16(2):1–13. <http://dx.doi.org/10.11144/Javeriana.upsy16-2.sds>
 72. Davis CG, Thake J, Vilhena N. Social desirability biases in self-reported alcohol consumption and harms. *Addictive Behaviours*. 2010;35(4):302–11. <http://dx.doi.org/10.1016/j.addbeh.2009.11.001>
 73. Australian Bureau of Statistics. Cultural diversity of Australia. 2022. Available from: www.abs.gov.au/articles/cultural-diversity-australia
 74. Roche A, Kostadinov V, Fischer J, et al. Addressing inequities in alcohol consumption and related harms. *Health Promotion International*. 2015;30:ii20–35. <http://dx.doi.org/10.1093/heapro/dav030>
 75. Cerdá M, Vlahov D, Tracy M, et al. Alcohol use trajectories among adults in an urban area after a disaster: Evidence from a population-based cohort study. *Addiction*. 2008;103(8):1296–307. <http://dx.doi.org/10.1111/j.1360-0443.2008.02247.x>
 76. Wu P, Liu X, Fang Y, et al. Alcohol abuse/dependence symptoms among hospital employees exposed to a SARS outbreak. *Alcohol and Alcoholism*. 2008;43(706–712). <http://dx.doi.org/10.1093/alcalc/agn073>
 77. Substance Abuse and Mental Health Services Administration. Treating substance use disorder in older adults: Treatment improvement protocol (TIP) 26; 2020.
 78. Wadd S, Galvani S. Working with older people with alcohol problems: Insight from specialist substance misuse professionals and their service users. *Social Work and Education*. 2014;33(5):656–69. <http://dx.doi.org/10.1080/02615479.2014.919076>
 79. Lancaster K, Seear K, Ritter A. Reducing stigma and discrimination for people experiencing problematic alcohol and other drug use: A report for the Queensland Mental Health Commission. Sydney, Australia: Drug Policy Modelling Program; 2017.
 80. Royal College of Psychiatrists. Substance misuse in older people: An information guide. London, UK: Royal College of Psychiatrists; 2015.
 81. Royal College of Psychiatrists. Our invisible addicts, 2nd edition. London, UK: Royal College of Psychiatrists; 2018.

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

This article is distributed under the terms of the Creative Commons Attribution-Non Commercial 4.0 International License. © Nankivell ME, et al.

82. Bareham BK, Kaner E, Hanratty B. Managing older people's perceptions of alcohol-related risk: A qualitative exploration in Northern English primary care. *British Journal of General Practice*. 2020;70(701):e916–e26. <http://dx.doi.org/10.3399/bjgp20X713405>
83. Kelly S, Olanrewaju O, Cowan A, et al. Interventions to prevent and reduce excessive alcohol consumption in older people: A systematic review and meta-analysis. *Age and Ageing*. 2018;47:175–84. <http://dx.doi.org/10.1093/ageing/afx132>
84. Bareham BK, Stewart J, Kaner E, et al. Factors affecting primary care practitioners' alcohol-related discussions with older adults: A qualitative study. *British Journal of General Practice*. 2021;71(711):e762–e71. <http://dx.doi.org/10.3399/BJGP.2020.1118>
85. Australian Institute of Health and Welfare. Alcohol and other drug treatment services in Australia annual report (cat. no. HSE 250). Canberra: AIHW; 2022.
86. Seddon J, Trevena P, Wadd S, et al. Addressing the needs of older adults receiving alcohol treatment during the COVID-19 pandemic: A qualitative study. *Ageing and Mental Health*. 2022; 5:919–24. <http://dx.doi.org/10.1080/13607863.2021.1910794>

DOI: <http://dx.doi.org/10.22374/ijmsch.v5SP2.96>

Int J Mens Com Soc Health Vol 5(SP2):e25–e39; 14 February 2023.

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