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## The health of older Western Australians: The role of age, gender, geographic location, psychological distress, perceived health, tobacco and alcohol

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## **Drinking Among Older Western Australians**

### **RESEARCH PAPER: The Health of Older Western Australians: The Role of Age, Gender, Geographic Location, Psychological Distress, Perceived Health, Tobacco and Alcohol**

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## **Drinking Among Older Western Australians**

### **Abstract**

**Purpose:** Rates of drinking and alcohol-related harms among older adults are increasing in most developed nations. The purpose of this research was to explore the relationship between at-risk alcohol use, smoking, gender, geographical location, self-reported health and psychological wellbeing among Western Australians aged 65 years and older.

**Design:** A secondary analysis was conducted of a cross-sectional survey that collected data from 7,804 West Australians aged 65 years and older between 2013 and 2015. Participants were categorised according to the following age groups: young-old (aged 65-74 years), older-old (aged 75-84 years) and oldest-old (aged 85+ years).

**Findings:** Results from a multinomial logistic regression analysis indicated that at-risk drinking decreased with increasing age. Current smokers, males and those males and females who perceived their health to be “excellent” were more likely to report at-risk drinking, as were the oldest-old males who lived in remote communities. Psychological wellbeing was not a predictor of at-risk drinking

**Originality:** This paper examines drinking behaviour among a diverse population of older Western Australians. The way in which the age groups were segmented is unique, since most studies of older Australian drinking patterns aggregate the older adult population. Some of our findings support existing literature, while the remainder provide unique data about the relationship between at-risk drinking, geographic location and psychological wellbeing.

**Key words:** older adults, at-risk drinking, alcohol, tobacco, wellbeing

**Paper type:** Research paper

## **Drinking Among Older Western Australians**

### **The Health of Older Western Australians: The Role of Age, Gender, Geographic Location, Psychological Distress, Perceived Health, Smoking and alcohol use.**

#### **Introduction**

Rates of at-risk alcohol consumption and alcohol use disorders have been increasing among older adults in most developed countries (for review, see Bright, 2019, Crome *et al.*, 2015, Geppert and Taylor, 2015). For example, the most recent Australian National Drug Strategy Household Survey (NDSHS) found that older Australians were engaging in at-risk drinking at the highest levels since this monitoring system began in 1985. In 2019, 17.4% of Australians aged between 60 and 69 years, and 8.8% of Australians aged 70 years and older, reported drinking at levels that placed them at-risk of short-term harm (Australian Institute of Health and Welfare, 2020). The NDSHS defines risk of short-term harm as drinking more than 40 grams of ethanol in any single day (or four Australian standard drinks). However, as older adults are physiologically more vulnerable to the effects of alcohol than younger people (for review, see Barry and Blow, 2016), the rates of older Australians drinking at at-risk levels are likely to be an underestimate.

Given the ageing population, concern has been growing (e.g., Bright, 2019, Royal College of Psychiatrists, 2018, Wilkinson, 2018) about the impact that at-risk drinking among older adults could have on healthcare systems. At-risk drinking among older adults has been found to be associated with increased rates of injuries (Tinetti and Kumar, 2010) and adverse medication interactions (Holton *et al.*, 2020). Meanwhile, longitudinal research shows a complex relationship between patterns of drinking and health among older adults. For example, an analysis of drinking patterns among 2,632 older drinkers living in New Zealand obtained over a 10-year period by Szabó *et al.* (2019) identified five distinct cohorts, categorised by level of frequency and consumption of alcohol at baseline and follow-up. All but one cohort reduced their level of consumption over the 10-year period. This cohort engaged in high frequency consumption of low levels of alcohol, and had the best physical and psychological health at baseline. In contrast, the only cohort in which no decrease in physical health was observed at the 10-year follow up was among those people initially engaged in moderate frequency consumption of high levels of alcohol saw no decrease in their physical health. Consequently, it is important that research be conducted to identify and better understand those factors that are associated with alcohol-related harms among older adults. Such research could help inform public health policy that reduces alcohol-related harms through age-specific targeted interventions. Doing so will reduce the growing impact of alcohol consumption among older adults on healthcare systems.

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At-risk drinking among older Australians is influenced by a range of factors, including social and cultural norms relating to the acceptability of drinking in Australia (Dare *et al.*, 2014a, Dare *et al.*, 2020). While older Australian men are still more likely than older Australian women to drink at levels that place them at-risk of short term harm, there was nevertheless an increase in the rate of at-risk drinking among older Australian women aged 50 to 69 years, relative to their male peers, reported across five waves of the NDSHS from 2001 to 2013 (Livingston *et al.*, 2018). Changing social norms relating to women's use of alcohol over the last few decades are likely to have contributed to increasing rates of at-risk drinking among older women (60+ years) both in Australia and internationally (Ahlner *et al.*, 2018, Australian Institute of Health and Welfare, 2017, Grant *et al.*, 2017, Livingston *et al.*, 2018). In addition, Australian women aged 50-59 and 65-74 years are now more likely to drink at risky levels than younger women (Australian Institute of Health and Welfare, 2019b).

Another key determinant of alcohol use among many older adults is the degree to which drinking has become embedded in their everyday routines, particularly after retirement (Grønkjær *et al.*, 2020, Burruss *et al.*, 2015). As with younger cohorts, alcohol is an integral feature of many older adults' social life, and is viewed as synonymous with social engagement and enjoyment (Dare *et al.*, 2020, Immonen *et al.*, 2011, Kelly *et al.*, 2018). Not surprisingly perhaps, more frequent opportunities for social engagement – such as that which often occurs in retirement villages - have also been associated with more frequent alcohol consumption (Dare *et al.*, 2014b, Burruss *et al.*, 2015).

Where alcohol use is viewed as an enjoyable and normal part of life and an individual has good health, potential alcohol-related harms may be downplayed (Wilson *et al.*, 2013). For example, qualitative research with older Australian and Danish women found that few considered their drinking was a health risk, despite 30% of the Australian sample drinking every day (Dare *et al.*, 2020). Similarly, research in the United Kingdom led Wilson *et al.*, to suggest that continued heavy drinking could be construed “as normal behaviour for someone experiencing relative wellbeing in later life, or if their experience of ill health was construed as unrelated to alcohol consumption” (p. 7).

While alcohol use is an enjoyable part of life for many older adults, there is evidence that older adults experiencing alcohol-related issues are less likely to access alcohol treatment services (Royal College of Psychiatrists, 2018), and those who do access services have high rates of mental health comorbidities (Behrendt *et al.*, 2020, Bright *et al.*, 2017). A secondary analysis of a randomised controlled trial investigating older adults with an alcohol use disorder ( $N = 644$ ) by Behrendt *et al.* (2020), in which a brief intervention was compared with

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a brief intervention comprising an additional eight sessions of more intensive treatment, found that mood disorders predicted higher alcohol intake at baseline. Participants with a mood disorder who received the more intensive treatment had significantly reduced their levels of alcohol consumption at a six-month follow-up, though such reductions were not seen in those who received the brief intervention alone.

Bright and Williams (2018) found that with appropriate screening, an Australian older adult-specific early intervention program was able to significantly reduce alcohol use and alcohol-related harm at a six-month follow-up among 140 participants. Notably though, these reductions were independent of participant's mood or anxiety disorders, which was measured by the Depression, Anxiety and Stress Scale (Lovibond and Lovibond, 1995). This absence of mental health effects on outcome might have been due to the intervention being targeted at at-risk drinker rather than older adults with an alcohol use disorder. However, this research did not examine the role of tobacco smoking, or how gender is associated with alcohol use, and the intervention was only available to people living within the greater Melbourne area.

In line with the World Health Organization's call for public health approaches that address the range of health behaviours typically associated with chronic diseases (2015), and in recognition of the Western Australian population, which is spread across a vast state comprising 2.67 million square kilometres, this research sought to understand how alcohol use and smoking, as well as gender and geographical location, were associated with self-reported health and psychological wellbeing among Western Australians aged 65 years and older.

### **Method**

#### ***Design***

A secondary analysis of the Health and Wellbeing Surveillance Survey (HWSS) was conducted. A range of reports that draw on HWSS data are available from the Western Australian Department of Health (2018).

#### ***Participants***

Data was collected from 7,804 West Australians aged 65 years and older between 2013 and 2015. Participants were categorised according to the following age groups: *young-old* (aged 65-74 years), *older-old* (aged 75-84 years) and *oldest-old* (aged 85+ years). For more detail about the number of participants who were classified within each of these three age categories and their gender distribution, see Table 1.

#### ***Measures***

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### *Alcohol Use*

The alcohol component of the HWSS asked participants whether or not they had consumed alcohol in the past 12 months. Those who reported not consuming alcohol in this period were classified as *non-drinkers*. The alcohol component of the HWSS also asked participants who drink: “In the past 4 weeks how often have you had (5-6 if male) (3-4 if female) standard drinks in a day?” Males who indicated that they had consumed five or more standard drinks on at least one occasion in the past month were classified as at-risk drinkers. Females who indicated that they had consumed either three or more standard drinks on at least one occasion in the past month were classified as at-risk drinkers. Respondents who reportedly drank alcohol but consumed less than these levels were classified as low risk drinkers. This classification of risk was based on previous National Health and Medical Research Council (2001) guidelines that were current at the time the HWSS was launched and these categories were retained in the data set for comparability across time.

### *Smoking*

Participants were asked whether they smoked cigarettes daily, occasionally, had quit smoking or had never smoked. For the purpose of this research, participants were classified as either: never smoked, ex-smoker or current smoker.

### *Health Status*

A single item from the Short Form 12 (Ware Jr *et al.*, 1996), a widely used health and quality of life measure that has been shown to have validity and reliability among older adults (Busija *et al.*, 2011), was used in the HWSS. This item was also included in the Australian Bureau of Statistics' (2018) 2017-18 National Health Survey. The item asked participants “In general, how would you say your health is?” and was measured using the same 5-point Likert scale as that used in the Short Form 12 (ranging from Poor to Excellent).

### *Psychological Wellbeing*

The Kessler-10 (Kessler *et al.*, 2002) is a 10-item self-assessment scale that measures levels of psychological distress. Scores are classified as low (10-15), moderate (16-21), high (22-29) and very high (30-50). The scale has been validated among older adults, with Vasiliadis *et al.* (2015) demonstrating that it has good concurrent validity with sensitivity and specificity when identifying major depressive disorder and generalised anxiety disorder. It has been shown to have a Cronbach's alpha of 0.88 and an ordinal alpha of 0.92, indicating a high level of internal consistency (Sampasa-Kanyinga *et al.*, 2018).

### *Procedure*



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The HWSS was established by the WA Department of Health in 2002 to monitor the health status of the WA population. Subsequently, each month, approximately 550 randomly selected WA households have taken part in a telephone survey. Participants are asked a range of questions about their demographics, including gender and location. For the purposes of this research, participants living in the Kimberley region (an area in the north west of Western Australia) were classified as “remote” and participants living outside of the Perth metropolitan area were classified as “regional”. People living in Perth were classified as “metropolitan”. Ethics approval for HWSS data collection was granted by the WA Department of Health Human Research Ethics Committee (Project #2008/11).

### Results

Across all three age groups, 53.2% ( $n = 2,531$ ) of females were *non-drinkers*, 36.0% ( $n = 1715$ ) were *low risk drinkers* and 10.8% ( $n=514$ ) were *at-risk drinkers*. Amongst males, 31.5% ( $n = 959$ ) were *non-drinkers*, 50.6% ( $n = 1,540$ ) were *low risk drinkers* and 17.9% ( $n = 545$ ) were *at-risk drinkers* (Table 1). A multinomial logistic regression analysis was conducted to examine differences in the variables of interest for this study (Table 2). Overall, females were less than half as likely to be at-risk drinkers than males. However, both *young-old* men and women were almost seven times more likely to be at-risk drinkers than those in the 85+ years age group. Current smokers were three times more likely to be at-risk drinkers than those who had never smoked. While levels of psychological distress were not statistically significant predictors of at-risk drinking, those who indicated that they had very high levels of psychological distress based on the Kessler-10 were approximately 30% less likely to be at-risk drinkers. Those who indicated that their health was excellent were more than twice as likely to be at-risk drinkers.

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### ***Tobacco use***

Among all females, 5.0% ( $n = 240$ ) were current smokers, 38.2% ( $n = 1817$ ) were ex-smokers, and 56.8% ( $n = 2703$ ) had never smoked. For males, 6.8% ( $n=208$ ) were current smokers, 59.6% ( $n = 1810$ ) were ex-smokers and 33.7% ( $n = 1026$ ) had never smoked. Among both males and females and across all age groups (except for *oldest-old* males), at-risk drinkers were more likely to be current smokers than either non-drinkers or low risk drinkers ( $\chi^2 = 19.379, 2, p < 0.001$ ) (Table 3).

### ***Drinking Status and Regional Area***

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While there was a greater proportion of *young-old* at-risk drinkers living in remote WA than in the metropolitan region or the regional areas, this difference did not reach statistical significance ( $\chi^2=12.88$ , 4,  $p=0.16$ ). This pattern was more evident among *older-old* males (85+ years) ( $\chi^2= 9.762$ , 4,  $p < 0.05$ ), where a larger proportion of people living in remote WA were likely to be either at-risk drinkers or non-drinkers compared to the rest of the state (Table 4).

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### *Drinking Status and Health*

Associations between at-risk drinking, self-reported health status and use of primary health services were explored using chi-square tests of significance. Both low risk and at-risk drinking were associated with lower recent utilisation of primary health care services ( $\chi^2=140$ , 4,  $p < 0.05$ ). While 30% of non-drinkers aged 65 years and older used primary healthcare services eight or more times in the last year, only 21% of at-risk drinkers had accessed primary healthcare services in the past year. These differences in primary health care services utilisation remained when controlling for gender and age.

Among females, 12.3% ( $n = 585$ ) reported being in *excellent* health, 67.8% ( $n = 3,226$ ) reported they had *very good to good* health and 19.9% ( $n = 948$ ) assessed their health as only *fair-to-poor*. Similar proportions were reported by males with 12.0% ( $n = 366$ ) indicating they were in *excellent* health, 67.5% ( $n = 2,054$ ) reporting *very good to good* health and 20.5% ( $n = 623$ ) regarding their health as only *fair-to-poor*. Chi-square tests of difference in the distribution of drinker categories according to self-assessed health suggested that both low risk drinkers and at-risk drinkers tend to report being in better health than non-drinkers ( $\chi^2=116.19$ , 4,  $p < 0.05$ ) (Table 5).

### **Discussion**

Our results show that alcohol use and at-risk drinking among older Western Australians decreases as they age. This finding is consistent with the most recent findings from the 2019 Australian NDSHS, in which the prevalence of at-risk drinking was lower among people aged over 70 years than those aged between 60 and 69 years (Australian Institute of Health and Welfare, 2020). Similar patterns have been evident in longitudinal analyses of alcohol consumption (Moos *et al.*, 2009, Szabó *et al.*, 2019). Moos *et al.*'s research identified that at-risk drinking for both men and women declined from baseline, when participants were 55 to 65 years, to when they were 75 to 85 years, therefore indicating "a slow but steady age-related decline in alcohol consumption among women and men with advancing age" (p. 1299). These findings have been replicated by Szabó *et al.*

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(2019), though they also noted a small but distinct cohort of older adults who engaged in high frequency consumption of low levels of alcohol, whose drinking did not decline overtime.

Also consistent with the NDSHS (Australian Institute of Health and Welfare, 2020), our results suggest that older men are more likely to be at-risk drinkers than older women. Similar gendered patterns of at-risk drinking among older adults have been identified elsewhere, including Norway, Denmark, Portugal and Belgium (Rossow and Træen, 2020), the United States (Breslow *et al.*, 2017), and the United Kingdom (Wadd and Papadopoulos, 2014).

We found that *older-old* males who lived in remote Western Australia were more likely to report engaging in at-risk drinking than those living in metropolitan Western Australia. This finding is consistent with other Australian population-based data suggesting higher risk drinking is more common in remote areas of Australia (Australian Institute of Health and Welfare, 2019a). A similar trend was seen in the other two age groups regardless of gender, though this did not reach statistical significance, perhaps due to the small sample size of people living in remote regions. However, this smaller subsample also means that the other key results from this study using the total sample are likely generalizable to other Western urban populations.

Older Western Australians who reported being current smokers were also more likely to be at-risk drinkers than non-smokers. This finding is consistent with other research that has found the “most commonly identified risk behaviour cluster” for chronic diseases, such as cardiovascular disease, is smoking and at-risk alcohol use (Meader *et al.*, 2016, p. 1).

The results also indicated that at-risk drinking was not associated with self-reported psychological distress, which is inconsistent with previous research regarding alcohol consumption among older adults (Behrendt *et al.*, 2020, Bright *et al.*, 2017). However, these studies looked at the mental health of people seeking treatment for alcohol and other drug use. As such, psychological distress and mental health might not be a predictor of at-risk drinking among older adults in the broader community. Rather, there is a growing body of research that suggests that motivations for at-risk drinking among samples of older adults in the community include enhancing social engagement and enjoyment (Dare *et al.*, 2020, Immonen *et al.*, 2011, Kelly *et al.*, 2018), reducing boredom (Kuerbis *et al.*, 2018), or it may simply be an entrenched and routine behaviour (Grønkjær *et al.*, 2020, Burruss *et al.*, 2015). These variables were not measured in our study.

We also found that at-risk drinking among older Western Australians was associated with higher ratings of perceived positive health and less frequent use of primary health care services. There are several ways to interpret this finding. First, it could suggest that people who have a general concern for managing their health are more likely to moderate their use of alcohol (and even abstain). Second, it could suggest that at-risk drinkers who reported excellent or very good

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health may not associate their drinking with potential health risks, and thus may not feel the need to see a medical practitioner. Third, higher self-reported health status among occasional at-risk drinkers could also indicate these older adults were more socially engaged, and therefore potentially healthier. This interpretation is consistent with the finding that psychological distress did not predict at-risk drinking. Finally, it could reflect that some non-drinkers have become non-drinkers in response to worsening health. As such, interpreting the overall distribution of responses to drinking patterns according to self-assessed health and psychological wellbeing may be confounded because of underlying differences in the dynamics of the composition of different drinker groups.

A limitation of this study that is inherent to most research exploring the epidemiology of alcohol-related harm among older adults was that it relied on self-report measures of alcohol use. A study by Wilkinson *et al.* (2011) that compared self-report measures of alcohol consumption with observational measures found that older adults underestimate their drinking by as much as 30%. Further, definitions of at-risk drinking that do not consider the plethora of other factors related to ageing, such as medication use and medical conditions, result in an underestimate of at-risk drinking. In addition to not considering these factors, the amount of alcohol reportedly consumed by participants to be considered at-risk drinkers in this study was higher than current criteria for males used by the NDSHS to define at-risk drinking, though not females. Another limitation of this research was that we were unable to determine how many of the non-drinkers were ex-drinkers, a methodological flaw of cross-sectional designs that has been identified by a number of alcohol epidemiologists (Zhao *et al.*, 2017, Stockwell *et al.*, 2016). Nonetheless, consistent with the aforementioned researchers' findings, our data may suggest that some drinkers respond to their worsening perceived health by drinking less or not at all.

Our findings also suggest that older adults not engaging in at-risk alcohol consumption are the group most likely to have regular contact with primary healthcare professionals, while those with a greater propensity to drink alcohol at risky levels, smoke cigarettes and to perceive their health positively, were least likely to utilise primary healthcare services. Thus, although primary healthcare professionals such as general practitioners (GP) are ideally situated to minimise alcohol-related harm through screening or the provision of health information and brief interventions (Bright and Williams, 2017), they are likely to have limited opportunities to do so with this population group. In turn, this leaves this population exposed to substantial, avoidable and costly chronic health problems.

Previous research has identified that older adults are receptive to receiving information from their GP or community pharmacist when it particularly relates to alcohol and medication use (Wilkinson *et al.*, 2016). As such, these primary healthcare professionals should consider leveraging the prescription and dispensing of medication as an opportunity to deliver relevant health information

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to older adults in order to minimise alcohol-related harm. Further, health promotion awareness and behaviour change campaigns targeting this population group should be developed that encourage them to access their GP and emphasise the benefits rather than the losses associated with reducing alcohol consumption (World Health Organization, 2015). When combined, these strategies have the capacity to reduce the incidence of costly alcohol-related morbidities among older adults, and possibly aid with the sustainability of healthcare systems in the short- to medium-term. We are not aware of any such health promotion initiatives. In addition to developing such initiatives, we recommend that health economic analyses are conducted to explore the potential savings in health care costs that targeted interventions might provide.

### **Conclusion**

In summary, the consumption of alcohol is generally regarded as pleasurable and is often associated with socialisation, so older adults may perceive few reasons not to drink alcohol, and many to encourage it. Our research demonstrates the importance of disaggregating age-groups in research and translation, when analysing health risk and other epidemiological data on populations aged 65 years and older, because of the vast between-group differences that can be masked without such approaches. Our findings also serve to highlight the importance of delivering clear health messages to older adults in primary health care settings about the short- and long-term health effects of drinking, and provide direction to intervention designers and policy makers.

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## Drinking Among Older Western Australians

**Table 1:** Drinking status by age classification and gender

	Males n (%)	Females n (%)
<b>Young-old (65-74 years)</b>		
Non-Drinker	497 (27.8)	1266 (48.7)
Low Risk Drinker	864 (48.4)	929 (35.8)
At-risk Drinker	425 (23.8)	403 (15.5)
<b>Total</b>	<b>1384 (100)</b>	<b>2597 (100)</b>
<b>Older-old (75-84 years)</b>		
Non-Drinker	346 (35.0)	905 (56.5)
Low Risk Drinker	531 (53.7)	606 (37.8)
At-risk Drinker	111 (11.2)	91 (5.7)
<b>Total</b>	<b>888 (100)</b>	<b>1602 (100)</b>
<b>Oldest-old (85 + years)</b>		
Non-Drinker	116 (43.0)	360 (64.3)
Low Risk Drinker	145 (53.7)	180 (32.1)
At-risk Drinker	9 (3.3)	20 (3.6)
<b>Total</b>	<b>270 (100)</b>	<b>560 (100)</b>

**Table 2:** At-risk drinking (OR results)

	b	SE	p	Exp(B)/OR
<b>Gender</b>				
Female	-0.834	0.076	0.000	0.434
Male	0			
<b>Age group</b>				
Young-old (65-74 years)	1.914	0.199	0.000	6.779
Older-old (75-84 years)	0.909	0.208	0.006	2.483
Oldest-old (85+ years)	0			
<b>Smoking status</b>				
Current smoker	1.178	0.142	0.000	3.249
Ex-smoker	1.013	0.081	0.000	2.755
Never smoker	0			
<b>Regional area</b>				
Metropolitan Perth	0.084	0.075	0.267	1.087
Kimberley	0.183	0.199	0.358	1.201
Rest of WA	0			
<b>General Health</b>				
Excellent	0.918	0.145	0.000	2.504
Very good to good	0.732	0.108	0.000	2.079
Fair to poor	0			
<b>Psychological Distress</b>				
Very high	-0.329	0.350	0.347	0.720
High	-0.247	0.205	0.227	0.781
Moderate	0.013	0.115	0.909	1.013
Low	0			

## Drinking Among Older Western Australians

**Table 3:** Drinking status and smoking status

	Females n (%)			Males n (%)		
	Non-drinker	Low risk	At risk	Non-drinker	Low risk	At risk
<b>Young-old (65-74 years)</b>						
Current Smoker	85 (6.7)	42 (4.5)	50 (12.4)	45 (9.1)	67 (7.8)	47 (11.1)
Ex-smoker	408 (32.2)	410 (44.1)	221 (54.8)	273 (54.9)	474 (54.9)	274 (64.5)
Never Smoked	773 (61.1)	477 (51.3)	132 (32.8)	179 (36.0)	323 (37.4)	104 (24.5)
<b>Total</b>	1266 (100)	929 (100)	403 (100)	497 (100)	864 (100)	425 (100)
<b>Older-old (75-84 years)</b>						
Current Smoker	27 (3.0)	18 (3.0)	7 (7.7)	18 (5.2)	21 (4.0)	6 (5.4)
Ex-smoker	283 (31.3)	240 (39.6)	50 (54.9)	187 (54.0)	344 (64.8)	76 (68.5)
Never Smoked	595 (65.7)	348 (57.4)	34 (37.4)	141 (40.8)	166 (31.3)	29 (26.1)
<b>Total</b>	905 (100)	606 (100)	91 (100)	346 (100)	531 (100)	111 (100)
<b>Oldest-old (85+ years)</b>						
Current Smoker	8 (2.2)	2 (1.1)	1 (5.0)	2 (1.7)	2 (1.4)	0 (0)
Ex-smoker	107 (29.7)	84 (46.7)	14 (70.0)	75 (64.7)	98 (67.6)	9 (100)
Never Smoked	245 (68.1)	94 (52.2)	5 (25.0)	39 (33.6)	45 (31.0)	0 (0)
<b>Total</b>	360 (100)	180 (100)	20 (100)	116 (100)	145 (100)	9 (100)

**Table 4:** Drinking status, gender and geographical region

	Females n (%)			Males n (%)		
	Non-drinker	Low risk	At risk	Non-drinker	Low risk	At risk
<b>Young-old (65-74 years)</b>						
Metro	606 (47.8)	467 (50.2)	212 (52.6)	256 (51.6)	447 (51.7)	200 (47.1)
Kimberley	43 (3.4)	18 (1.9)	16 (4.0)	15 (3.0)	23 (2.7)	23 (5.4)
Res of WA	617 (48.7)	444 (47.8)	175 (43.4)	226 (45.5)	394 (45.6)	202 (47.5)
<b>Total</b>	1266 (100)	929 (100)	403 (100)	497 (100)	864 (100)	425 (100)
<b>Older-old (75-84 years)</b>						
Metro	479 (52.9)	336 (55.4)	45 (49.5)	174 (50.3)	311 (58.6)	59 (53.1)
Kimberley	19 (2.1)	9 (1.5)	2 (2.1)	14 (4.0)	8 (1.5)	3 (2.7)
Res of WA	407 (45.0)	261 (43.1)	44 (48.4)	158 (45.7)	212 (39.9)	49 (44.1)
<b>Total</b>	905 (100)	606 (100)	91 (100)	346 (100)	531 (100)	111 (100)
<b>Oldest-old (85+ years)</b>						
Metro	201 (57.2)	115 (63.9)	17 (85.0)	62 (53.4)	72 (49.7)	5 (55.6)
Kimberley	6 (1.7)	0 (0)	0 (0)	1 (0.9)	3 (2.1)	0 (0)
Res of WA	153 (42.5)	65 (36.1)	3 (15.0)	53 (45.7)	70 (48.3)	4 (44.4)
<b>Total</b>	360 (100)	180 (100)	20 (100)	116 (100)	145 (100)	9 (100)

## Drinking Among Older Western Australians

**Table 5:** Drinking status and self-reported health

	Females n (%)			Males n (%)		
	Non-drinker	Low risk	At risk	Non-drinker	Low risk	At risk
<b>Young-old (65-74 years)</b>						
Excellent	148 (12.7)	174 (18.7)	68 (16.9)	55 (11.1)	137 (15.9)	48 (11.3)
Very good to good	838 (66.2)	635 (68.4)	293 (72.7)	308 (62.0)	587 (67.9)	313 (73.8)
Fair to poor	280 (22.1)	120 (12.9)	42 (13.4)	134 (27.0)	140 (16.2)	63 (14.9)
<b>Total</b>	1266 (100)	929 (100)	403 (100)	497 (100)	864 (100)	424 (100)
<b>Older-old (75-84 years)</b>						
Excellent	72 (8.0)	74 (12.2)	12 (13.2)	34 (9.8)	58 (10.9)	15 (13.5)
Very good to good	607 (67.1)	432 (71.3)	65 (71.4)	229 (66.2)	359 (67.6)	79 (71.2)
Fair to poor	225 (24.9)	100 (16.5)	14 (15.4)	83 (24.0)	114 (21.5)	17 (15.3)
<b>Total</b>	904 (100)	606 (100)	91 (100)	346 (100)	531 (100)	111 (100)
<b>Oldest-old (85+ years)</b>						
Excellent	16 (4.4)	19 (10.6)	2 (10.0)	10 (8.6)	9 (6.2)	0 (0)
Very good to good	226 (62.8)	119 (66.1)	11 (55.0)	78 (67.2)	95 (65.5)	6 (66.7)
Fair to poor	118 (32.8)	42 (23.3)	7 (35.0)	28 (24.1)	41 (23.8)	3 (33.3)
<b>Total</b>	360 (100)	180 (100)	20 (100)	116 (100)	145 (100)	9 (100)