The Relationship Between Alcohol Use in Pregnancy and Later Use of Alcohol During Middle Age

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To my village of family and friends, for their love, kindness, meals, phone calls, visits, coffees and help with the kids. I especially want to thank my Mum and Dad and The Pryce family- there are not enough words to express how important you all are to me.

For my children- Billie, Iggy and Franklin. Caring for 3 little people whilst studying and working has had its challenges but your beautiful little smiling faces have kept me going. I know that whilst it has been a busy time, watching me study and work hard will help foster your love and appreciation of education and learning. Most importantly, to my amazing wife Hilary, where do I begin? You are absolutely phenomenal and I am so lucky.

Declaration of Originality

The conduct of this dissertation was approved by the University of Newcastle Human Research Ethics Committee (UON HREC), approval number: H-2022-0139. The thesis contains no material which has been accepted for the award of any other degree or diploma in any University or other Tertiary Institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying subject to the Copyright Act 1968.

Acknowledgment of Collaboration and Authorship

I hereby certify that the work embodied in this thesis contains a scholarly work of which I am a joint author. Dr Sally Hunt was responsible for the design, trained the student in the research methodology, was the lead auditor during data analysis, and supervised revision of the thesis. I recruited participants, transcribed the data, and was an independent auditor of the data. Both authors robustly collaborated on final thematic content. I have compiled this thesis as part requirement of a Master of Clinical Psychology and as such have taken the lead in writing of the initial and final versions of the thesis.

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Student Researcher

07.11.2022

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07.11.2022

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Formatting Style of Manuscript

The formatting style used in this thesis is formatted according to the Vancouver system of referencing in line with the instructions to authors for the Drug and Alcohol Review Journal (Appendix A). However, the manuscript in this thesis has a word limit of 5000-8000 words and the abbreviated version that will be sent to the journal will have a word limit of 3500 words.

Running head: Alcohol Use in Pregnancy and Later Life

The Relationship Between Alcohol Use in Pregnancy and Later Use of Alcohol During Middle Age

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The authors declare no conflicts of interest.

Ethics Approval

Approval was obtained from the University of Newcastle's Human Ethics Committee (HREC) (Approval number: H-2022-0139), see Appendix B.

Consent to Participate

Informed consent was obtained from all participants included in the study, see Appendix C.

Author Contributions

KAB analysed the data and wrote the thesis. SH and KAB jointly developed the study, collected the data and interpreted the results. SH revised the manuscript.

Abstract

Introduction Despite extensive research into alcohol use by pregnant women, few studies have explored the relationship between drinking during pregnancy and subsequent maternal alcohol use in middle age. Pregnancy is typically a time when women access health services and it is an opportunity to provide information and advice about alcohol use. This study aimed to examine the relationship women's current alcohol use and their alcohol use during pregnancy. It was hypothesized that women who drank alcohol during pregnancy would have a higher current alcohol consumption and related problems than women who did not drink during pregnancy. The relationships between advice received about drinking in pregnancy and subsequent drinking, and beliefs about safe levels of alcohol use during pregnancy were also explored.

Methods Cross-sectional survey data was collected from 305 women aged 40-60 years. ANOVAs were conducted to evaluate the hypotheses.

Results Women who drank alcohol in pregnancy had higher subsequent levels of consumption and harmful use than women who abstained during pregnancy. Women who believed that some level of alcohol use during pregnancy was safe had higher total AUDIT scores (a measure of hazardous and harmful drinking) than women who thought no amount was safe.

Discussion and conclusions This study highlights the long-term relationship between pregnancy drinking and drinking in middle age. These results provide support for the notion that the prenatal period provides an opportunity for detection of women who may be more likely to experience alcohol related issues in later life. This may assist in targeting public health strategies which seek to address problematic alcohol use in middle aged women through intervention in the prenatal period.

Key words alcohol, women, middle-age, pregnancy, motherhood, maternal

Key Points

- Women who drank alcohol during at least one of their pregnancies had higher current levels of risky drinking as measured by the AUDIT and higher current levels of alcohol consumption than women who did not drink alcohol during any of their pregnancies.
- Women who believed that some level of alcohol use during pregnancy was safe had higher current risky drinking patterns than women who thought no amount was safe.
- Despite the presence of current national guidelines which recommend that pregnant women consume no alcohol during pregnancy, nearly half of the respondents in this study reported drinking alcohol during at least one of their pregnancies.
- Results of this study suggest that there is a relationship between prenatal use of alcohol and later alcohol use hence there may be use in interventions during the prenatal period targeting the overall potential harms of alcohol use, beyond the prenatal period.

Relationship Between Alcohol Use in Pregnancy and Later Use of Alcohol During Middle Age

Middle aged women in Australia are drinking significantly more alcohol now than in previous decades and the level of alcohol that they are consuming is increasing their risk of immediate and later harms[1]. During the period of 2001 to 2019, there was an increase in both long term risky drinking and risky-single occasion drinking amongst middle-aged women in Australia[2]. Whilst there is no standard definition of middle age, researchers and the broader public usually consider middle age to include people from the ages of 40 to 60 years[3].

In order to screen for alcohol use amongst women and intervene appropriately where needed, it is important to understand key periods of time in which they are more likely to access health services. One of these opportunities is when women are pregnant as they are often seeking healthcare during their pregnancies. Despite this opportunity, there is a lack of research examining the relationship between prenatal alcohol use and women's use of alcohol in the years following pregnancy, specifically as she enters middle-age.

Women's Alcohol Use

Whilst women are vulnerable to experiencing issues associated with alcohol use, they are less likely than men to seek support for their alcohol use directly hence the importance of other practitioners such as GPs regularly screening for issues[2]. Women who regularly drink alcohol largely view drinking as normal and acceptable and any concerns they have relate to the need to be seen as "in control" and respected rather than health or other negative implications of alcohol use[3].

Research focusing on alcohol use within women as a distinct group is limited, this contrasts the plethora of research and information available on men's alcohol use [4-6]. Women have been underrepresented in research about alcohol use for a number of reasons including a belief that women are more complicated to study given their menstrual cycles and a greater portion of women having coexisting mental health issues[7,8]. Further contributing to the underrepresentation of women in alcohol research is that women are also less likely than men to seek help for issues with alcohol use in health care settings and are less likely to have these issues identified by their health care professionals[9]. Women may seek support for issues such as stress and anxiety however are often not screened for alcohol use hence these issues go undetected. Despite this, emerging research suggests that focusing on women's alcohol use distinctly from men's alcohol use is important as there are gender-based differences in the way that women experience prevention and treatment[10]. Generally, women are more likely to experience higher levels of anxiety and depression as co-occurring issues when they abuse substances including alcohol[6].

Alcohol Use During Pregnancy

Given the known risk of maternal alcohol use on unborn babies including the potential for fetal alcohol spectrum disorders and other harms[11], women in Australia are routinely screened for alcohol use in the prenatal period. This provides a key opportunity for detection and intervention to address problematic alcohol use. Peadon et al.[12] found that most women want information about alcohol use during pregnancy and demonstrate a willingness to reduce their use of alcohol if advised they should do so. Women generally reduce alcohol use during pregnancy however their consumption increases as the age of their youngest child increases, up

to five years of age[5]. What is less clear, is whether reduction of alcohol use prenatally relates to levels of alcohol use in the woman's middle age.

Currently, Australian guidelines recommend that pregnant women abstain from all alcohol use during pregnancy, this contrasts with guidelines prior to 2009 which recommended that low alcohol use in pregnancy was permissible. In an Australian study conducted by Meurk et al.[13], semi-structured interviews with 75 women were qualitatively analyzed and women generally expressed a view that drinking small amounts of alcohol during pregnancy was a low-risk pastime. Furthermore, women felt that wine was a healthy choice of alcoholic beverage and they thought that their healthcare professionals were not overly concerned about alcohol use during pregnancy.

There are a number of factors that contribute to women's continued use of alcohol during pregnancy despite the risks and guidelines. These factors include confusion about the guidelines, inconsistency in messaging and a culture of alcohol use in Australia[14]. Treatment programs and approaches for women who drink alcohol during pregnancy have not been studied widely however there is emerging research which suggests that brief interventions can be effective in reducing alcohol use during pregnancy[7,15].

The Provision of Information About Prenatal Alcohol Use

Early alcohol use has been linked to later alcohol issues, suggesting that problematic alcohol consumption in one's early life increases the likelihood of developing and maintaining alcohol use issues later in life[16,17]. Jenkins et al.[18], found through a large twin study in America, that early alcohol use was strongly associated with a later risk of alcohol dependence for women. Several factors appeared to influence the likelihood of these women developing alcohol use

disorders including a history of physical abuse, having externalizing problems and a family history of addiction. Tran et al.[19] obtained data from a prospective cohort study of 3715 women in Australia to understand how their alcohol use changed over their childbearing years and found a high level of stability over time for women who did not drink alcohol or drank at low levels prior to their pregnancy. For women who were moderate or heavy drinkers during their reproductive years, there was greater levels of changeability detected in their use over the 21 years that they were studied.

Research into the provision of information to pregnant women has focused on the quality and nature of information provided to pregnant mothers rather than the timing of such information and whether this plays a role in mediating prenatal alcohol use or alcohol use later in life. Meurk et al.[13] used semi-structured face-to-face interviews with 40 Australian women. These researchers found that pregnant women generally described their healthcare providers as being relaxed about alcohol related risks and concluded that health messages should better educate women about the effects of alcohol on both unborn babies and pregnant mothers. Similarly, Hammer et al.[20] found that women were often provided with unclear information on guidelines about alcohol use in pregnancy and were provided with insufficient information from healthcare professionals.

The Current Study

The aim of this study was to examine the relationship between 40–60-year-old women's current alcohol use and their alcohol use earlier on in their lives, specifically during their pregnancies. It was hypothesized that women currently aged between 40 and 60 years who drank alcohol during their pregnancies would have higher current patterns of risky alcohol use and

consume a higher current quantity of alcohol than women who did not drink during any of their pregnancies. These women's views on the impact of alcohol use on unborn babies during pregnancy were also explored to understand whether these views were related to their current drinking habits. The provision of information about alcohol related health risks during pregnancy was examined to understand whether this plays a role in a woman's current drinking behavior.

Methods

Ethics

Approval was obtained from the University of Newcastle Human Research Ethics Committee (HREC) (Approval number: H-2022-0139), see Appendix B.

Procedure and Participants

This study used cross-sectional study design to explore current drinking outcomes and historical experiences of alcohol use during pregnancy and provision of information about drinking in pregnancy from self-report data collected online. Eligible participants were women aged between 40 and 60 years of age, who had been pregnant at least once, and were Australian residents. If they did not meet all of these eligibility conditions they were excluded from the study. Participants did not receive reimbursement for completing the survey nor were any other incentives offered for completion of the survey.

Recruitment

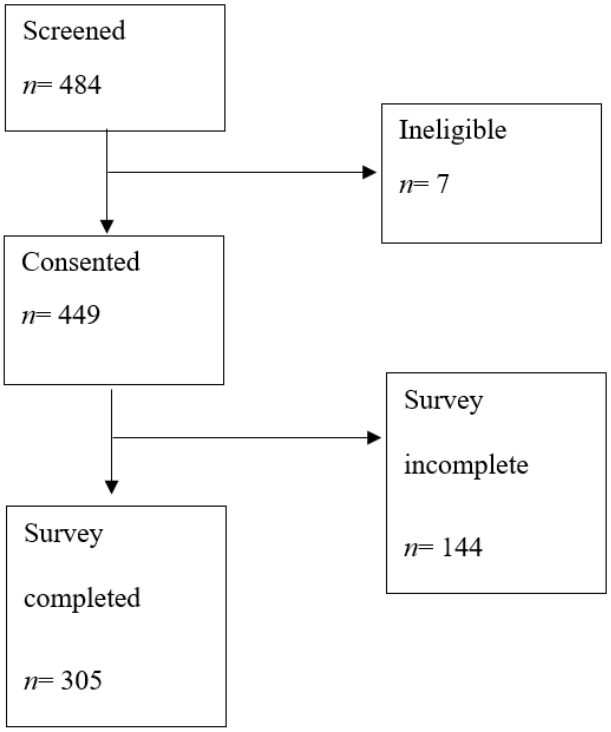
Participants were recruited into the trial after responding to paid and informal advertisements using social media channels (Facebook, Twitter and Instagram), the advertising material is contained within Appendix E. The advertising material included an image of a family

where the adults are holding wine glasses and one of a woman holding a full wine glass whilst holding a baby in her arms. Potential participants clicked on the advertisement and were taken to the Participant Information Statement within a web-based survey hosted by Question Pro (www.questionpro.com). The information statement is contained within Appendix C and the questionnaire is contained within Appendix D. Participants were informed that by clicking on the link to access the survey and by submitting their completed answers, they would be providing implied consent. The questionnaire was estimated to take 20 minutes to complete, however, they could exit at any time and there was no consequence for non-completion. At the completion of the survey, participants were taken to a page thanking them for their contribution and giving information about support services available.

Of those who responded to the advertisement, 484 proceeded to the Participant Information Statement, followed by a declaration of consent. Those who consented (n=456) were then screened for eligibility, where 7 participants were deemed ineligible which ended the questionnaire immediately. 144 participants ceased responding before completion of the questionnaire or did not complete large parts of the survey, leaving 305 participants for inclusion in the analysis.

Figure 1

Participants Included in the Study



Materials

Demographics

The following demographic information was collected; country of birth, year of birth, Aboriginal status, education level, employment status and relationship status.

Current and Historical Alcohol Use

The Opiate Treatment Index – Alcohol Module (OTI)[21] was used within the survey to understand participant's current quantity of alcohol use. The OTI has good psychometric properties including validity, internal consistency and reliability[21-24]. In a study by Adelekan et

al.[22], test-retest reliability coefficients were high for all the substance use scales and internal consistency of the scales was generally high (Cronbach's α: range 0.34–0.93). Darke et al[21] found substantial validity of the OTI when correlating this with The Addiction Severity Index[25] (0.70). It is however recognized that psychometric properties were not located for studies using the OTI which include pregnant women specifically.

The Alcohol Use Disorders Identification Test (AUDIT)[26], was used to assess hazardous drinking levels. The AUDIT consists of 10 brief items which address frequency and quantity of use, binge behavior, and indicators of dependence and harm. Scores of 8 or above on the AUDIT indicate hazardous use of alcohol and possible dependence. The AUDIT has a high level of test-retest reliability, validity and internal consistency, with median internal consistency in a review of 18 studies of Cronbach's alpha above 0.80[27]. Daeppen et al.[28] found test-retest reliability of .81 in 126 primary care patients over 6 weeks. Selin[29] found (across a general population sample) that across items, correlations ranged between 0.6 and 0.8 whilst overall reliability of AUDIT scores was 0.84. Dybek et al.[30] found good combinations of sensitivity and specificity for alcohol use disorders and at-risk consumption (0.97 and 0.91). It is however recognized that psychometric properties were not located for studies using the AUDIT which include pregnant women as a specific cohort. The current survey included the 10 AUDIT questions and the value for Cronbach's Alpha was α=.86 which indicates good internal consistency.

Questions were asked about alcohol use in pregnancy, this included questions about levels of alcohol use, timing of alcohol use, participant's views on their alcohol use, the provision of information about alcohol use in pregnancy and how the pregnancy ended. Questions were also asked about their understanding of current guidelines about alcohol use in pregnancy and what level of alcohol use during pregnancy they personally felt was safe.

Statistical Analysis

One hundred and forty-four participants were excluded from analysis due to not completing the survey or neglecting to provide key information such as details about their alcohol use in pregnancy. Data analysis was performed using IBM SPSS Statistics version 28. Data was tested for adherence to the assumptions of each statistical method used.

Descriptive statistics were calculated and ANOVAs carried out to identify differences in current quantity of alcohol use and harmful alcohol use between women who did and did not drink during pregnancy. An ANOVA was carried out to identify differences in current quantity of alcohol use and harmful alcohol use between women who indicated that they were given advice not to drink alcohol during pregnancy and women who indicated they were not given advice not to drink alcohol during pregnancy. An ANOVA was carried out to identify differences in current quantity of alcohol use and harmful alcohol use between women who believed that some level of alcohol use during pregnancy was safe and women who did not believe that some level of alcohol use during pregnancy was safe.

Results

Sample Characteristics

305 participants completed the survey and they were aged 40-60 years *(M*=51 years, *SD*=6.06). As shown in Table 1, 81% (*n*=247) were born in Australia and 9.2% (*n*=28) in New Zealand. Only 2.6% (*n*=8) indicated that they identified as Aboriginal or Torres Strait Islander. Nearly three quarters of the sample had a tertiary education, with a bachelors, masters or doctorate degree 73% (*n*=223) and 86.6% (*n*=264) were engaged in paid work outside the home.

The majority of participants (84%, *n*=256) were married, living with a partner or in a relationship.

Participants reported experiencing between 1 and 8 pregnancies (*M*= 2.53, *SD*=1.18) with the majority reporting two pregnancies (38.7%) or three pregnancies (26.9%). Thirty-seven percent (*n*=113) reported drinking whilst trying to conceive in at least one pregnancy and 44.3% (*n*=135) reported drinking alcohol during at least one of their pregnancies. Only 6.2% (*n*=19) reported drinking more than 4 standard drinks on one day during at least one of their pregnancies.

Table 1

Demographic Characteristics (n=305)

Demographic	*n*	*(%)*
Marital status		
Single, never married	9	3
Married	211	69.2
Living with a partner	35	11.5
In a relationship	10	3.3
Separated	16	5.2
Divorced	20	6.6
Widowed	4	1.3

Indigenous status *n* (%)		
Aboriginal or Torres Strait Islander	8	2.6
Prefer not to say	1	0.3
Neither Aboriginal nor Torres Strait Islander	296	97
Highest level of educational attainment, I(%)		
Left school prior to finishing	6	2
Secondary school qualification	16	5.2
Certificate	47	15.4
Bachelors Degree	135	44.3
Masters Degree	69	22.6
PhD or higher	19	6.2
Other	13	4.3
Country of birth, *n* (%)		
Australia	247	81
United Kingdom	28	9.2
New Zealand	9	3
Employment status, *n* (%)		

Paid work outside the home	264	86.6
Unpaid work or study outside the home	7	2.3
No outside work or study	34	11.1

Current Alcohol Use

The majority of participants reported that they had drank alcohol within the previous month (*n*=223), with 53.4% (*n*=163) consuming alcohol at least 2-3 times per week. Fifty-five percent (*n*=168) said that they drank 1-2 standard drinks on a typical day when drinking alcohol followed by 25.2% (*n*=77) saying they drank 3-4 standard drinks on a typical day when drinking alcohol. The mean AUDIT total score was 14.68 (*SD*=6.83), this mean score indicates harmful alcohol consumption. Table 2 outlines current alcohol use.

Table 2

Current Use of Alcohol (n=305)

Alcohol use	*n*	*%*
Frequency of alcohol use		
Not within the last 12 months	30	9.8
Monthly or less	52	17
2-4 times per month	60	19.7
2-3 times per week	84	27.5

4 or more times per week	79	25.9
Number of standard drinks estimated on a typical day when drinking alcohol		
No use	30	9.8
1-2 standard drinks	168	55.1
3-4 standard drinks	77	25.2
5-6 standard drinks	20	6.6
7-9 standard drinks	7	2.3
10 or more standard drinks	3	1
How often have six or more drinks on one occasion		
Never	170	55.7
Less than Monthly	72	23.6
Monthly	27	8.9
Weekly	27	8.9
Daily or almost daily	9	3

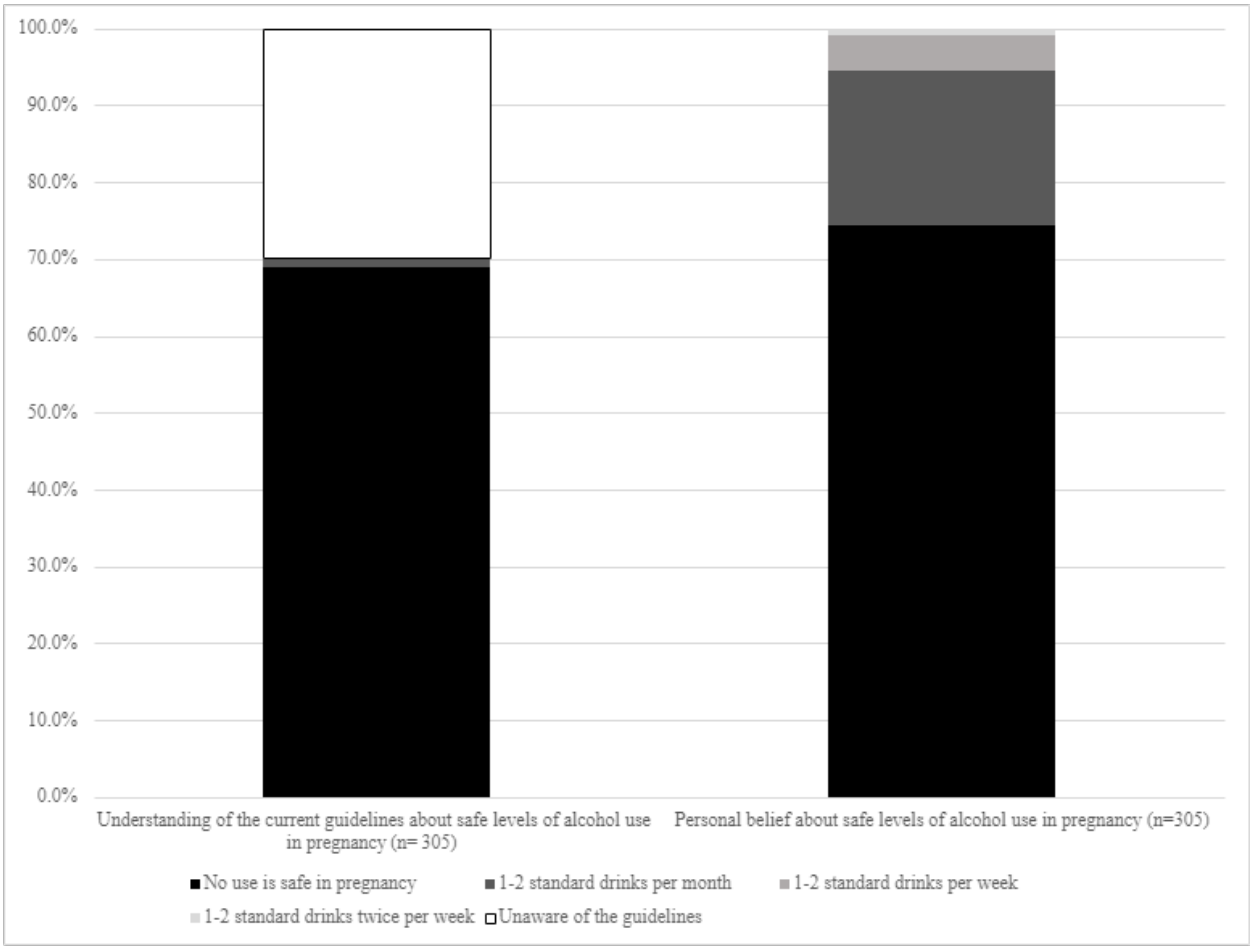
Awareness of Current Alcohol Guidelines

Just over 70% (*n*=214) of respondents were aware of there being current guidelines about alcohol use in pregnancy and of these respondents, Sixty-nine percent (*n*=210) were aware that

these guidelines recommended no alcohol use in pregnancy however 26.6% (*n*=78) of respondents personally believed that some alcohol use in pregnancy was safe.

Figure 2

Understanding of current guidelines and personal beliefs about safe levels of alcohol use in pregnancy



The Relationship Between Prenatal Alcohol Use and Current Alcohol use

A one way between groups analysis of variance (ANOVA) was used to investigate the relationship between current alcohol use as measured by total AUDIT score and alcohol use

during pregnancy. Inspection of the skewness, kurtosis and Shapiro-Wilk statistics indicated that the assumption of normality was supported for each of the two conditions. Levene's statistic was non-significant, F (1, 302) =1.10, p = .296, and thus the assumption of homogeneity of variance was not violated. The ANOVA was statistically significant, indicating that women who drank alcohol during at least one of their pregnancies had higher current total AUDIT scores (M = 15.66, SD=6.21), than women who did not drink alcohol during any of their pregnancies (M=13.97, SD=7.17), F (1, 302) = 4.69, p = .031, n^2 = .015.

A further ANOVA was used to investigate the relationship between current quantity of alcohol consumption and alcohol use during pregnancy. Inspection of the skewness, kurtosis and Shapiro-Wilk statistics indicated that the assumption of normality was supported for each of the two conditions. Levene's statistic was non-significant, F (1, 302) =3.09, p = .080, and thus the assumption of homogeneity of variance was not violated. The ANOVA was statistically significant, indicating that women who drank alcohol during at least one of their pregnancies had higher current levels of alcohol consumption (M=6.93, SD=2.64), than women who did not drink alcohol during any of their pregnancies (M=6.22, SD=3.05), F (1, 302) = 4.50, p = .035, n^2 =.015.

Women's Views About the Impact of Alcohol Use on Their Child and Later Alcohol Use

Participant's views on the impact of alcohol use on unborn babies during pregnancy were also explored. As noted in Table 3, 46.2% (n=141) indicated that they drank some alcohol during their first pregnancy and 5.9% (n=18) reported that they had (at least once) consumed more than four standard drinks on one day during this pregnancy. Only 2.6% (n=8) reported believing that there had been an impact on their child due to prenatal use of alcohol during first pregnancy.

Table 3

Alcohol use in first pregnancy (n=305)

Pregnancy information	*n*	*(%)*
Planned pregnancy		
Yes	223	73.1
Any alcohol use in this pregnancy		
Yes	141	46.2
No	164	53.8
Did not answer question	1	0.3
Any alcohol use in first trimester		
Never	215	70.5
Monthly	53	17.4
Weekly	35	11.5
Daily	2	0.7
Any alcohol use in second trimester		
Never	237	77.7
Monthly	48	15.7
Weekly	20	6.6

Daily	0	0
Any alcohol use in third trimester		
Never	230	75.4
Monthly	57	18.7
Weekly	18	5.9
Daily	0	0
Ever drink more than four standard drinks during first pregnancy		
Yes	18	5.9
No	287	94.1
Believe there was an impact of alcohol use on the unborn baby/child		
Yes	8	2.6
No	133	43.6
N/a (no alcohol use in pregnancy reported)	164	53.8

Due to the low number of participants reporting the belief that their child was adversely affected by their alcohol use in their first pregnancy (2.6%, *n*=8), the relationship between perceived impact of alcohol use on unborn babies during pregnancy and current drinking habits

was not analyzed. The relationship between beliefs about safe levels of alcohol use in pregnancy generally and current alcohol use as measured by total AUDIT score was analyzed using an ANOVA. Inspection of the skewness, kurtosis and Shapiro-Wilk statistics indicated that the assumption of normality was supported for each of the two conditions. Levene's statistic was non-significant, F (1, 303) =1.97, p = .162, and thus the assumption of homogeneity of variance was not violated. The ANOVA was statistically significant, indicating that women who believed that some level of alcohol use during pregnancy was safe had higher total current AUDIT scores (M=16.09, SD=5.86) than women who thought no amount was safe (M=14.19, SD=7.09), F (1, 303) = 4.54, p = .034, n^2 = .015.

Provision of Information About Alcohol Related Health Risks

Fifty-six percent (n=171) of participants indicated that they were given advice not to drink alcohol during pregnancy. The relationship between being advised not to drink alcohol during pregnancy and current alcohol use as measured by total AUDIT score was analyzed using an ANOVA. Inspection of the skewness, kurtosis and Shapiro-Wilk statistics indicated that the assumption of normality was supported for each of the two conditions. Levene's statistic was non-significant, F (1, 303) =0.23, p = .637 and thus the assumption of homogeneity of variance was not violated. The ANOVA was not statistically significant, indicating that women who were advised not to drink alcohol during pregnancy did not have significantly different AUDIT scores (M=14.51, SD=6.71) than women who were not advised to abstain from alcohol use during pregnancy (M=14.89, SD=7.01), F (1, 303) = 0.23, p = .631, n^2 = .001.

Discussion

The aim of the study was to examine the relationship between 40–60-year-old women's current alcohol use and their alcohol use earlier on in their lives, specifically during their pregnancies. As predicted, women who drank alcohol during at least one of their pregnancies had higher current levels of risky drinking as measured by the AUDIT and higher current levels of alcohol consumption than women who did not drink alcohol during any of their pregnancies. This provides support for the notion that the prenatal period provides an opportunity for detection of women who may be more likely to experience alcohol related issues in later life. Interventions targeting alcohol use prenatally focus on minimising alcohol affected births however broadening these interventions to include information about alcohol related harms more broadly may prove advantageous. It may be that women who drank alcohol during pregnancy perceived this alcohol use to be helpful in managing stress and distress during pregnancy and were more likely to use alcohol as a strategy for managing stress and distress later in their lives. These results may also be due to a number of factors which were not explored as part of this study including the potential that women who drank alcohol during pregnancy were drinking alcohol at high levels prior to pregnancy and they may have been likely to continue this trajectory throughout their life for a multitude of reasons.

Whilst the prevalence of Fetal Alcohol Spectrum Disorder (FASD) in Australia is difficult to determine for many factors including lack of routine assessments, it is estimated that worldwide, one in every 13 women who consume alcohol during pregnancy will have a child with fetal alcohol spectrum disorder[31]. It is therefore surprising that despite the number of women who drank alcohol in pregnancy, very few indicated they believed that there had been an impact on their unborn child due to this use. This may relate to a lack of knowledge about the range of symptoms that can arise from pre-natal alcohol exposure including FASD which is a

leading cause of developmental disorders, and a range of physical, mental and social consequences[10].

There is a largely held societal view that only high levels of alcohol use in pregnancy result in FASD and that children with FASD will always have distinct facial and growth factors that would identify them as having this disorder[32]. In reality, children who are exposed to alcohol prenatally, even at low levels, may display later behavioral issues such as impulsiveness, attention deficits, lower intelligence and cognitive deficits[33]. This misbelief may mean that women are less likely to attribute things like their children's behavioral or learning difficulties on their alcohol use in pregnancy. Women who drank during pregnancy and subsequently had children who experience difficulties such as developmental disorders may be more likely to attribute these disorders to things such as environmental influences given a lack of knowledge about all the ways that alcohol use can cause harm prenatally. They may also feel shame and embarrassment when thinking about the possibility that their prenatal alcohol use caused lasting issues for their child. Whilst the relationship between the belief of impact of alcohol use on the unborn child and later alcohol use was unable to be analyzed due to insufficient power, it is an area that warrants further exploration.

Women who believed that some level of alcohol use during pregnancy was safe had higher risky drinking patterns than women who thought no amount was safe. This suggests that there is a relationship between perceived impact of alcohol on the pregnant mother and unborn baby and mother's later alcohol use. It may be that if a woman is not concerned that some alcohol is harmful to her unborn child, she is more likely to downplay or not see alcohol related harms more generally and thus drink more later in life. Again, it is difficult to make assumptions about

causation and there may be a number of alternative factors at play that have influenced this relationship.

Despite the presence of current national guidelines which recommend that pregnant women consume no alcohol during pregnancy, nearly half of the respondents in this study reported drinking alcohol during at least one of their pregnancies. They may be drinking alcohol during pregnancy for a number of reasons including as a means of coping with adverse life experiences, to conform with social norms or due to a lack of understanding and awareness of National Guidelines[34]. It is, however recognized that the guidelines were changed to include the recommendation of no alcohol use in pregnancy in 2009 and for many women in the study, this was after they had become pregnant. Prior to 2009, guidelines generally recommended that women consume up to low levels of alcohol use during pregnancy. It is also recognized that some of the women that reported drinking alcohol during their pregnancy may have only done so prior to discovering that they were pregnant. Just over half the participants indicated that they were given advice not to drink alcohol during at least one of their pregnancies. This contributes to the literature which suggests that in recent decades, woman have received unclear information about the dangers of alcohol use in pregnancy. This lack of clarity puts women in positions where it is difficult to make informed choices about their alcohol use in pregnancy. Further education to health professionals and the broader Australian community about alcohol related harms during pregnancy so that all risks are understood and there is clarity about what the guidelines say and why no alcohol use in pregnancy is considered safe.

Women who were advised not to drink alcohol during pregnancy did not have significantly different patterns of risky drinking than women who were not advised to abstain from alcohol use during pregnancy. This indicates that merely being told not to drink alcohol

during pregnancy does not influence later alcohol use and supports the notion that interventions need to go beyond the provision of psychoeducation about alcohol related harms if the goal is for lasting change.

Limitations

The current study contributes to the field of problematic alcohol use in women and in particular, provides evidence of the relationship between prenatal alcohol use and later alcohol use however it is important to view these finding with an understanding of the study's limitations. Given the data was collected via self-report survey, there is a potential risk for response bias[35]. This may be particularly relevant given the content of the survey relates to alcohol use and also behaviors during pregnancy, both of which are highly scrutinized and polarizing topics. Despite the fact that the survey was anonymous, people often under-estimate their current and previous alcohol consumption and frequency of use, especially if they carry a strong motivation for social desirability[36].

Given the survey was anonymous and de-identified, participants who only partially completed the survey were not contacted to complete the remainder of the study. Future surveys of this nature could consider the use of personalized links to re-enter the survey if participants need to pause part way through. This could reduce study attrition and gives recognition to the fact that many people have busy lives and might not have time to complete a survey in its entirety on one occasion.

The current research did not collect data on the amount of time since women (who are currently aged between 40 and 60 years) engaged in prenatal alcohol use. This would have been useful information to collect and would have enabled analysis of average years since prenatal

alcohol use. The data collected was primarily obtained through social media respondents, which decreases the likelihood of getting data from those who do not have internet or social media accounts, which may have changed the type of respondents. Furthermore, results from this study may not be generalizable to the broader Australian population, as over half of the sample was tertiary educated, inconsistent with population norms. The sample was, however representational of women aged 40-60 years in Australia in terms of their alcohol use given their consumption of alcohol was predominantly seen at risky levels[37].

Finally, the research method did not allow for interpretation of causal relationships hence whilst we are able to understand more about the relationship between prenatal alcohol use and later alcohol use, we are not able to reach definitive conclusions about why this relationship exists.

Conclusion and Further Considerations

Understanding the factors that may contribute to middle aged women's problematic use of alcohol is important and can assist with reducing alcohol related harms. Results of this study suggest that there is a relationship between prenatal use of alcohol and later alcohol use hence there may be use in interventions during the prenatal period targeting the overall potential harms of alcohol use, beyond the prenatal period. Given women are less likely to seek help for issues with alcohol use[9], pregnancy presents a unique opportunity for routine assessment of their alcohol use given women are generally accessing healthcare at this time due to their pregnancies. Assessments and interventions with women should take a holistic approach and seek to understand the current and historical function of alcohol in the pregnant woman's life.

Future research could focus on other mediators of problematic alcohol use in women aged 40- 60 years to better understand both the factors that contribute to this use and other key opportunities for intervention. It is also noted that women aged 40-60 years are often going through perimenopause or menopause and there may be a relationship between this key life stage and the woman's alcohol use hence this should be controlled for in future research on this group.

Research could also seek to identify what other key periods in women's lives provide opportunity for intervention to reduce later problematic alcohol use such as when young women receive vaccinations in adolescence or as part of school based curriculums. Another area of research that could be expanded on is the relationship between the belief of impact of alcohol use on the unborn child and later alcohol use, especially given the emergence of research and public health campaigns about FASD.

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demographic factors among women aged 40–65 years in Australia. Drug and alcohol review. 2022 May;41(4):724-31.

Appendix A- Journal Submission Guidelines

SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere, except as a brief abstract in the proceedings of a scientific meeting or symposium.

Once you have prepared your submission in accordance with these guidelines, manuscripts should be submitted online at **https://mc.manuscriptcentral.com/dar**. To ensure fast peer review and publication, manuscripts that do not adhere to the following instructions will be returned to the corresponding author for revision before undergoing peer review.

Click here for more details on how to use **ScholarOne.**

Authorship

All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Review **editorial standards** and scroll down for a description of authorship criteria. Further information is also available under 'Author contribution statement' in the Title page section.

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MANUSCRIPT CATEGORIES AND REQUIREMENTS

Word, Table/Figure and Reference Limits

Our editorial approach is centred on accuracy and effective communication, and thus we encourage authors to take particular care in determining the minimum number of words, tables, figures and references necessary to report their study and ideas. Authors should bear in mind that material not essential to the paper but which may be necessary for replication can be included in supplementary online information (see section (i) below). We encourage data and statistical syntax files that would aid independent replication to be included as supplementary material.

The word lengths specified below are for the main text only, excluding the title page, abstract, acknowledgements, references and any tables or figures. There is a maximum of five tables and figures (combined) for original research papers and two for Brief Reports – see (g) Tables and Figures, below.

We understand that in some cases (e.g. reporting of mixed methods studies), articles may have to be longer or include more tables/figures than our limits stipulate, and we aim to be flexible to accommodate such needs. If authors think they have to exceed these limits to report the findings effectively, they should explain why in the cover letter.

Manuscripts are published in the following sections.

Original Papers – reports of new research findings or conceptual analyses that make a significant contribution to knowledge (up to 3500 words). Papers analysing qualitative fieldwork or documentary materials (normally without tables) may have up to 5000 words (see under "Reporting Guidelines" below for further details). Ordinarily, original papers should include no more than 40 references.

Commentaries and For Discussion – evidence-based opinion pieces involving areas of broad interest (up to 1500 words) and invited commentaries. **Comments** are pieces where the editors have decided to invite comments (up to 1000 words) from scholars on another paper.

Reviews – reviews of literature on a defined topic (up to 3500 words).

Comprehensive Reviews – including systematic reviews and meta-analyses, can have up to 5000 words.

Brief Reports – preliminary findings or studies with substantive findings that require fewer words and tables/figures to give a complete account of the research (up to 1500 words). Ordinarily, Brief Reports should include no more than 20 references.

Rapid Review – brief reviews of the literature providing a timely update on emerging areas in the alcohol and other drugs field and related matters (up to 2000 words). To enable such timely summaries of critical topics for clinicians, service managers, policy makers and/or researchers, components of the systematic review process may be simplified or omitted (e.g. limiting time frames, databases, bias assessments or other methodological aspects of a typical systematic review) to produce an information summary in a short period of time (Tricco et al. 2015). A rapid review article would typically be commissioned and follow normal peer review processes, although authors are welcome to contact the Editorial Office with a brief proposal for consideration.

Case Reports and Case Series – *Drug and Alcohol Review* will only publish a limited number of case reports and case series (up to 1500 words), limited to high quality descriptions of cases that make a unique contribution to the literature through description of an unusual presentation, support or contest a hypothesis, or offer new insights into a condition or treatment. The submission should provide new information on diagnosis or clinical care that can lead to practice change care relating to drug and alcohol use. See under "Reporting Guidelines" below for further details.

Obituaries – *Drug and Alcohol Review* will publish obituaries related to the life and works of prominent researchers and others who have substantially contributed to the alcohol and other drugs field (approximately 350-500 words). Typically commissioned, obituaries are brief overviews of the deceased person's life and major contributions. Along with an appreciation of their work and personal traits, please include the person's birth and death years, place of birth, names and cities of the major institutions where the person worked, positions of importance held,

and other interests outside work in the field. Approaches to publish obituaries should be made to the **Editorial Office**.

Editorials – are usually commissioned but unsolicited material may be considered. Please approach the **Editorial Office** before submitting this material.

Letters to the Editor – are welcomed and will be summarily reviewed (up to 1000 words).

Critiques – reviews of books or grey literature are welcomed, but please approach the **Editorial Office** before submitting a review (up to 800 words).

Special Issues and Special Sections on topics of interest are also regularly published. A proposal must be approved by the Editorial Board, and should initially be sent to the Editorial Office. Papers for a Special Issue or Section should be submitted as the appropriate article type (e.g. Original Paper, Review). Please include a note in the cover letter to indicate which special section the paper is intended for.

PREPARATION OF THE MANUSCRIPT

Manuscript Style

We encourage high quality writing and refer our authors to the many writing guides available online, such as **Kipling's Guide to Writing a Scientific Paper**. Manuscripts should follow the style of the Vancouver agreement detailed in the International Committee of Medical Journal Editors' revised **Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication**. We also encourage the use of non-stigmatising language as outlined by the International Society of Addiction Journal Editors (see: **http://www.isaje.net/addiction-terminology.html**). Expression should generally refer to alcohol and other drugs to reflect the status of alcohol as a drug.

- **Spelling:** The journal uses English (UK) spelling.
- **Units:** All measurements must be given in International System (SI) or SI-derived units with traditional units in parentheses; exceptions are blood pressure which should be expressed in mm Hg and haemoglobin concentration (g/dL). Blood alcohol level or other alcohol levels must be expressed in percentages (e.g. BAL 0.05%, which means 0.05 g (50 mg) of alcohol in every 100 ml of blood).
- **Abbreviations:** The Journal strictly limits the use of abbreviations to lengthy terms that are used at least three times, with the exception of abbreviations of certain standard units of measurement and statistical measures such as SD. All abbreviations should be written in full on their first use, followed by the abbreviation in parentheses.
- **Trade names:** Drugs should be given their approved, not proprietary, names and the source of any new or experimental preparation should be given.

Parts of the Manuscript

A cover letter should be included in the 'Cover Letter' section of the ScholarOne system. The text may be entered directly into the field or uploaded as a file.

Please submit a main document file using Microsoft Word that includes all parts of the text in the sequence indicated below, including tables and figures.

Manuscripts should be presented in the following order:
(a) Title page
(b) Abstract and key words
(c) Key point summary
(d) Text
(e) Acknowledgements
(f) References
(g) Tables and Figures (can be included where mentioned in the main document, at the end of the main document or uploaded separately)
(h) Appendices (to be part of the main document)
(i) Supplementary online information

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The title page should contain:
1. The title of the paper – the title should be concise and informative, with no abbreviations.
2. A short running title of no more than 40 characters, including spaces.
3. Each author's full name, and affiliation (department, institution, city and country).
4. The full postal address, email address and telephone number (optional) of the corresponding author.
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Note: If the paper is accepted, these interests statements will appear in the published version after

the Acknowledgements.

Author contribution statement. **ISAJE Guidelines** define authorship as substantial contribution to all aspects of the research design, analysis and interpretation of data and contribution to the intellectual content of the article. All authors must be willing to take public responsibility for the content of the article. Please note that the authors will be asked to confirm knowledge of these guidelines during the submission process. All authors should meet the minimum standards described by the International Committee of Medical Journal Editors. Authorship should be based on the following four criteria: Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND drafting the work or revising it critically for important intellectual content; AND final approval of the version to be published; AND agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy of integrity of any part of the work are appropriately investigated and resolved. The statement on the title page should read, "Each author certifies that their contribution to this work meets the standards of the International Committee of Medical Journal Editors."

Abstract and key words

The second page should include a structured abstract of no more than 250 words, using the following headings:

- For *Original Papers* and *Brief Reports* – Introduction, Methods, Results, Discussion and Conclusions.
- For *Reviews, Comprehensive Reviews* and *Rapid Reviews* – Issues, Approach, Key Findings, Implications, Conclusion.
- For Case Reports and Case Series – *Introduction, Case Presentation, Discussion* and *Conclusions.*
- Abstracts are encouraged but not required for *Commentaries, Comments* and *Editorials*, and can be unstructured.

For the purposes of indexing, a maximum of five key words should be supplied below the abstract and should be taken from those recommended by the **US National Library of Medicine's Medical Subject Headings** (MeSH) browser list.

Key point summary

This should include three to five dot points which outline the key findings and significance of the paper. These are not mandatory at first submission but will be requested before a paper is accepted. Key points are not required for editorials, commentaries, comments or letters to the editor.

Text

The text of *Original Papers* should conform to the conventional structure for scientific communications – introduction, methods, results, discussion and conclusions. We encourage a succinct introduction (guideline of 800 words). The format of *Reviews, Comprehensive Reviews, Commentaries* and *Comments* is likely to differ from this and authors should consult previous issues of the Journal for guidance. *Brief Reports* should generally conform to the format of original papers. All results should be justified by describing the methods employed (in the methods section), including details of the data and analytical approach, and the results of any statistical analyses.

We suggest authors follow guidelines for the discussion section of their paper, as reported in the ***British Medical Journal***:

- Statement of principal findings;
- Strengths and weaknesses of the study;
- Strengths and weaknesses in relation to other studies, particularly discussing any differences in results;
- Meaning of the study: possible mechanisms and implications for clinicians or policymakers;
- Unanswered questions and future research.

Further information on the requirements for randomised controlled trials; reviews; case-controlled, cohort, cross-sectional studies; case reports and case series; and qualitative papers can be found under Reporting Guidelines.

Endnotes will be allowed where information cannot be explained in the text, but should not be used for references or side-comments. There is a limit of five endnotes.

Statistical information should be reported consistently throughout the manuscript.

- We prefer 95% confidence intervals and where they are not appropriate, *P*-values with three decimal places, with $P<0.001$ where the *P*-value is smaller.
- For decimal fractions less than 1.00, use a zero in the whole-number position (e.g. 0.01).
- Confidence intervals should be expressed using commas rather than dashes or "to" (e.g. 1.23, 1.39).
- Meaningful regression terms should be used (e.g. odds ratios rather than beta coefficients in logistic regression). With continuous outcomes, coefficients must be specified in relation to the unit of measurement.
- Round percentages to whole numbers where the base for the percentage is less than 100. Percentages otherwise should be reported to one decimal place.

Acknowledgements

Contributions of colleagues or institutions can be acknowledged but personal thanks or appreciation of anonymous reviewers is not appropriate. Trial registration number and name of the public trial registry should be listed here for a study with such registration.

References

For first submission, any style of referencing can be used, as long as in-text references and a reference list are included. However, please note that published papers are required to use the Vancouver system of referencing, and if the paper is accepted authors will be asked to convert references before it is prepared for publication.

References should be numbered consecutively in the order in which they are first mentioned in the text. If references are cited in tables or figures, number according to the placement in the text of the first identification of the table or figure. Avoid the use of abstracts as references. References to unpublished data and personal communications should not appear in the list but should be cited in the text only (e.g. Smith A, 2011, unpublished data). Manuscripts accepted in final form but not yet published may be referenced; the journal should be named and the phrase '(in press)' should follow. For papers which have been published online but not yet assigned a volume or page numbers, include the phrase '[Epub ahead of print]' and the paper's Digital Object Identifier (DOI). All citations mentioned in the text, tables or figures must be listed in the reference list. Conversely, the reference list may not include works not cited.

Journal titles should be abbreviated as they would appear in the **US National Library of Medicine catalogue**. Indicate references in the text using Arabic numbers inside square brackets (e.g. [1] or [2-7] or [4, 5]). In the reference list, cite the names of all authors – '*et al*.' can be used after the sixth author's name if there are seven or more authors.

We recommend the use of software such as **Endnote** for reference management and formatting.

References should be formatted as follows:

Journal articles
[1] Rose G. International trends in cardiovascular disease: implications for prevention and treatment. Aust NZJ Med. 2005;14:375-80.
[2] Reeves S, Bertrand J, Uchida H, Yoshida K, Otani Y, Ozer M, et al. Towards safer risperidone prescribing in Alzheimer's disease. Br J Psychiatry. 2021;218:268-75.

Book
[3] Henderson S, Byrne DG, Duncan-Jones P. Neurosis and the social environment. 3rd ed. Sydney: Academic Press, 1981.

Book Chapter
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Tables and Figures

There should be a maximum of five tables and figures combined for original research papers and two for Brief Reports. Requests to exceed these limits will be considered on a case-by-case basis.

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. Number tables consecutively in the text in Arabic numerals. Explanatory matter, including definition of abbreviations, should be placed in footnotes to a table. Tables can be added in the main document where mentioned, included at the end of the main document or uploaded as separate files. The legend should be above the table, and should be concise but comprehensive – the table, legend and footnotes must be understandable without reference to the text. Vertical lines should not be used to separate columns. Column headings should be brief, with units of measurement in parentheses. If data come from another published or unpublished paper, the original source should be cited.

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All illustrations (line drawings and photographs) are classified as figures. Figures should be numbered using Arabic numerals, and cited in consecutive order in the text. Figures will be published in greyscale in the print version of the journal, but will be available in colour in the online version. Where possible and clearly legible, use black and white rather than coloured figures. For instance, lines on a graph can be distinguished by dots vs. solid lines. Exceptions are occasionally made to print a figure in colour. Figures can be added in the main document where mentioned, included at the end of the main document or uploaded as separate files, with the figure number incorporated in the file name.

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes and resolutions are accepted.

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Figure legends should accompany figures when included in the manuscript file or be typed on a separate page when figures are uploaded as separate files. In the published version, the legend will appear below the figure. Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement, either as a box incorporated in the figure or in the legend.

Appendices

Appendices should be kept short and confined to information needed to understand material in the main paper. They should be included at the end of the main document and will appear in the print and online version of the article.

Supplementary online information: Supporting information is not essential to the article but contains information that would be necessary to replicate the study, or provides greater depth and background and may include tables, figures, videos, datasets, etc. This material can be submitted with your manuscript and will appear online, without editing or typesetting.

Supplementary material should be submitted as a separate file/s, with sections numbered in Roman numerals, with the prefix 'S' (e.g. Table S1, Figure S1) and be referred to in the text. If written by a person other than the author/s of the main text, their name/s should be included below the title.

Guidelines on how to prepare this material and which formats and files sizes are acceptable can be found at: **http://authorservices.wiley.com/bauthor/suppmat.asp**

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Reviewers will remain anonymous but can view the authors' details (i.e. single blind review). Reviewers are asked to keep all the details of the review confidential and to advise if there are any conflicts of interest.

Drug and Alcohol Review follows **Wiley's policy on confidentiality of the review process**.

Publication Ethics

International Society of Addiction Journal Editors (ISAJE) Ethical Practice Guidelines provide guidance to authors 'regarding ethical and procedural issues that affect the integrity of scientific publishing'. We ask that authors read and observe these guidelines, especially in regard to study design and ethical approval, consent, authorship, conflict of interests, plagiarism and redundant publication.

An ethics statement should be included in the Methods section if applicable.

Principles for Publication of Research Involving Human Subjects

Manuscripts which report on data collected from human subjects should contain a statement to the effect that all studies have been reviewed by the appropriate ethics committee or Institutional Review Board and have therefore been performed in accordance with the ethical standards laid down in an appropriate version of the **Declaration of Helsinki** (as revised in Brazil 2013). For studies where this applies, it should also state clearly in the text that all persons gave their informed consent prior to their inclusion in the study. Details that might disclose the identity of the subjects under the study should be omitted. In cases where approval has not been sought or would not normally be required, please indicate the reasons for non-approval in the covering letter.

Registration

All randomised controlled trials (RCT) involving clinical populations must be registered with a public trials registry such as the **Australian and New Zealand Clinical Trials Register**. The trial registration number and name of the registry will need to be cited in the acknowledgement section of the paper. If the commencement of the trial precedes the registration date, please explain why in the cover letter. We encourage registration for non-RCT studies, including cohort studies, policy evaluations and other observational epidemiological studies.

Reporting Guidelines

-

  - RCTs: The CONSORT Statement provides evidence-based recommendations for reporting RCTs. All RCTs must follow the CONSORT guidelines including the checklist and flow diagram.
  - Reviews: The PRISMA Statement encourages transparent reporting of meta-analyses and systematic reviews. Where appropriate, the PRISMA checklist and flow diagram should be included. To view the PRISMA Statement and Guidelines click here.
  - Case-Controlled, Cohort, Cross-Sectional Studies: Refer to the STROBE Statement and checklist for reporting.
  - Case Reports and Case Series: Submissions should adhere to guidance on the publication of case reports, including providing evidence of patient consent using a consent form (please include a statement that the patient has provided consent and have proof available if requested), or evidence of ethics committee approval for publication of the case report or case series without the patient's consent.

- When writing up a case report the following five sections are recommended by **Cohen (2006)**: an abstract, an introduction and objective with a brief literature review, a description of the case report, a discussion that includes an explanation of the literature review, a summary of the case and a conclusion. Cohen also provides an appendix with a check list to publishing case reports which may be useful for guidance.

- **Frawley and Finney Brown** also provide guidance around the writing of case studies for publication.

  - Qualitative papers: The following criteria will be used to review papers which are based on qualitative material – observations, recorded conversations or open-ended responses or documentary material – including such work as ethnographic, historical and policy studies. Please note that there is a guideline of up to 5000 words and tables and figures are not typically included. If authors think they have to exceed these limits to report the findings effectively, they should explain why in the cover letter.

- *Transparency*: Is the research question clearly defined? Does the question fit a qualitative research design? Is the particular methodology (i.e. the principles that guide the research such as grounded theory, phenomenology, action research, discourse analysis, ethnography, case study and so on) described and discussed? Is the type of qualitative method (i.e. the 'tools' used to conduct the research such as interview, focus groups, document analysis and so on) described and discussed?

- *Procedure*: Is the fieldwork approach described? Is the fieldwork context (region, place, institution and so on) clearly described? Is the sampling strategy clearly described and justified? Are the procedures for collecting and recording data described? Is the method of analysis described, including the steps of analysis? Is the method of analysis consistent with the original research questions, the methodology and the type of qualitative methods used?

- *Structure*: This journal outlines a structure for papers that is general enough to be applied to qualitative designs. Are common rules for presentation of qualitative data, such as use of participant identifiers and indentation of quotes, followed?
- *Coherence*: Are the data presented systematically and coherently? Are adequate data (i.e. extracts, quotations) presented in the paper for the reader to understand the relationship between the interpretation and the evidence? Are significant disagreements or counter-examples noted, particularly where they diverge from the main interpretation or the data? Does the author make use of other evidence (literature and/or theory) to assess and interpret their findings and conclusions?
- Note: These criteria are adapted from an editorial: **Olsen A, Higgs P, Maher L. A review of qualitative research in *Drug and Alcohol Review*. Drug Alcohol Rev 2015;34:474-6**, which is available free **online**.

Appendix B- Ethics Approval Letter

HUMAN RESEARCH ETHICS COMMITTEE

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Notification of Expedited Approval

To Chief Investigator or Project Supervisor:	**Doctor Sally Hunt**
Cc Co-investigators / Research Students:	**Ms Kathryn Anthony-Benson**
Re Protocol:	**Alcohol use in pregnancy and later life**
Date:	**14-Jun-2022**
Reference No:	**H-2022-0139**

Thank you for your **Initial Application** submission to the Human Research Ethics Committee (HREC) seeking approval in relation to the above protocol.

Your submission was considered under **Low Risk Research Expedited** review by the Chair/Deputy Chair.

We are pleased to advise that the decision on your submission is **Approved** effective **11-Jun-2022**.

In approving this protocol, the Human Research Ethics Committee (HREC) is of the opinion that the project complies with the provisions contained in the National Statement on Ethical Conduct in Human Research, 2007, and the requirements within this University relating to human research.

Approval will remain valid subject to the submission, and satisfactory assessment, of annual progress reports. *If the approval of an External HREC has been "noted" the approval period is as determined by that HREC.*

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request. Your approval number is **H-2022-0139**.

If the research requires the use of an Information Statement, ensure this number is inserted at the relevant point in the Complaints paragraph prior to distribution to potential participants You may then proceed with the research.

Conditions of Approval

This approval has been granted subject to you complying with the requirements for *Monitoring of Progress*, *Reporting of Adverse Events*, and *Variations to the Approved Protocol* as detailed below.

PLEASE NOTE:
In the case where the HREC has "noted" the approval of an External HREC, progress reports and reports of adverse events are to be submitted to the External HREC only. In the case of Variations to the approved protocol, or a Renewal of approval, you will apply to the External HREC for approval in the first instance and then Register that approval with the University's HREC.

- ***Monitoring of Progress***

Other than above, the University is obliged to monitor the progress of research projects involving human participants to ensure that they are conducted according to the protocol as approved by the HREC. A progress report is required on an annual basis. Continuation of your HREC approval for this project is conditional upon receipt, and satisfactory assessment, of annual progress reports. You will be advised when a report is due.

- ***Reporting of Adverse Events***

1. It is the responsibility of the person **first named on this Approval Advice** to report adverse events.
2. Adverse events, however minor, must be recorded by the investigator as observed by the investigator or as volunteered by a participant in the research. Full details are to be documented, whether or not the investigator, or his/her deputies, consider the event to be related to the research substance or procedure.
3. Serious or unforeseen adverse events that occur during the research or within six (6) months of completion of the research, must be reported by the person first named on the Approval Advice to the (HREC) by way of the Adverse Event Report form (via RIMS at https://rims.newcastle.edu.au/login.asp) within 72 hours of the occurrence of the event or the investigator receiving advice of the event.
4. Serious adverse events are defined as:
    - Causing death, life threatening or serious disability.
    - Causing or prolonging hospitalisation.
    - Overdoses, cancers, congenital abnormalities, tissue damage, whether or not they are judged to be caused by the investigational agent or procedure.
    - Causing psycho-social and/or financial harm. This covers everything from perceived invasion of privacy, breach of confidentiality, or the diminution of social reputation, to the creation of psychological fears and trauma.
    - Any other event which might affect the continued ethical acceptability of the project.
5. Reports of adverse events must include:
    - Participant's study identification number;
    - date of birth;
    - date of entry into the study;
    - treatment arm (if applicable);
    - date of event;
    - details of event;
    - the investigator's opinion as to whether the event is related to the research procedures; and
    - action taken in response to the event.
6. Adverse events which do not fall within the definition of serious or unexpected, including those reported from other sites involved in the research, are to be reported in detail at the time of the annual progress report to the HREC.

- ***Variations to approved protocol***

If you wish to change, or deviate from, the approved protocol, you will need to submit an *Application for Variation to Approved Human Research* (via RIMS at https://rims.newcastle.edu.au/login.asp). Variations may include, but are not limited to, changes or additions to investigators, study design, study population, number of participants, methods of recruitment, or participant information/consent documentation. **Variations must be approved by the (HREC) before they are implemented** except when Registering an approval of a variation from an external HREC which has been designated the lead HREC, in which case you may proceed as soon as you receive an acknowledgement of your Registration.

Linkage of ethics approval to a new Grant

HREC approvals cannot be assigned to a new grant or award (ie those that were not identified on the application for ethics approval) without confirmation of the approval from the Human Research Ethics Officer on behalf of the HREC.

Best wishes for a successful project.

Human Research Ethics Committee

For communications and enquiries:
Human Research Ethics Administration

Research & Innovation Services
Research Integrity Unit
The University of Newcastle
Callaghan NSW 2308
T +61 2 492 17894
Human-Ethics@newcastle.edu.au

RIMS website - https://RIMS.newcastle.edu.au/login.asp

Linked University of Newcastle administered funding:

Funding body	Funding project title	First named investigator	Grant Ref

Appendix C- Information Statement and Confidentiality

Human Research Ethics

Participant Information Statement and Consent
Anonymous surveys

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

From Dr Sally Hunt
School of Psychological Sciences
University of Newcastle
University Drive,
Callaghan 2308
T: +61 2 4985 4305
E: Sally.Hunt@newcastle.edu.au

Regarding Research Project: Alcohol use in pregnancy and later life
Document version 2 dated 06/06/2022

Dear potential research participant,

You are invited to participate in the research project noted above which is being conducted by researchers from the University of Newcastle.

The research is part of Kathryn Anthony-Benson's Masters of Clinical Psychology at the University of Newcastle, supervised by Dr Sally Hunt from the School of Psychological Sciences.

The information below provides more detail about the study and how you can participate, if you choose to do so.

1. **What is the research study about?**

The purpose of the research is to examine the correlation between 40–60-year-old women's current alcohol use and alcohol use earlier on in their lives, specifically during their pregnancies. The timing of provision of information about alcohol related health risks will be examined to understand whether this plays a role in a woman's current and previous drinking behaviour.

2. **Who is conducting the research?**

This research project is being conducted by researchers, Dr Sally Hunt and Kathryn Anthony-Benson from the University of Newcastle's School of Psychological Sciences.

3. **Who can participate in the research?**

We are seeking women aged between 40 and 60 years who have been pregnant at least once. If you are not an Australian resident, then unfortunately this study is not suitable for you.

4. **What does participation involve?**

If you agree to participate, you will be asked to complete an anonymous, one-off, online survey that is expected to take around 20 minutes to complete. Once commenced, the survey will be available for

completion whilst that browser window is open. The survey will ask you questions about your current and historical use of substances including alcohol and will also ask about your views about alcohol use during pregnancy.

5. Do you have to take part in this research study?

Participation in this research study is voluntary. If you do not want to take part, you do not have to. If you decide to participate and later change your mind, you are free to withdraw from the study at any time prior to submitting your completed survey. Due to the anonymous nature of the survey, if you decide to withdraw from the project after submitting a completed survey, we cannot withdraw your responses.

6. What is the benefit of participating in this research study?

Whilst there are no anticipated benefits to you personally in participating in this research, the findings will help better understand alcohol use during pregnancy and the woman's later life. This information could help inform future programs aimed at encouraging positive health behaviours.

7. Are there any risks involved in participating in this research?

Some of the questions deal with potentially sensitive issues, such as your experience of pregnancy and substance use. Should you find any of the questions upsetting you can stop your participation at any time prior to submission of the survey.

You can contact Lifeline on 131114 should you wish to seek support regarding any of the issues raised within the survey/questionnaire. You can also call SANDS on 1300 07 2637, this service offers support for people who have experienced early pregnancy loss, newborn deaths or stillbirths.

8. How will your privacy be protected?

Due to the anonymous nature of the survey, the responses you provide will not be identifiable.

Data will be retained securely for a minimum period of 5 years from completion of the research and managed/stored in accordance with the University's Research Data and Materials Management Guideline (see https://policies.newcastle.edu.au/document/view-current.php?id=72) or any successor Guideline. The data is also applicable to University of Newcastle policy provisions (as amended from time to time).

The survey will be hosted online via QuestionPro. As such, any data will be encrypted using Secure Socket Layer technology to protect it from being lost, manipulated or accessed by unauthorised third parties in accordance with the site's privacy policy (see https://www.questionpro.com/help/privacy-policy.html).

9. How will information collected by the research team be used?

Human Research Ethics

Participant Information Statement and Consent
Anonymous surveys

The collected data may be presented in academic publications, journals or conferences. The results of this study will also form the basis of Ms Anthony-Benson's Master of Clinical Psychology thesis.

If you would like a copy of the summary of the results, please email the Chief Investigator (sally.hunt@newcastle.edu.au) and a summary of the results will be made available when the study is completed.

Individual participants will not be identifiable in any reports arising from the project, although individual anonymous responses may be quoted. Non-identifiable data may also be shared with other parties to encourage scientific scrutiny, and to contribute to further research and public knowledge.

If you would like a copy of the summary of the results when the study is completed, which should be in December, 2022, please tick the box at the end of the survey and provide an email address for us to send this to. This email will not be linked to your responses on the questionnaire.

10. What you need to do in order to participate

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact the researcher.

Completion (by clicking "start" below) and submission of the survey will be taken as your implied consent to participate.

11. Do you need more information?

If you would like further information, please contact Dr Sally Hunt (sally.hunt@newcastle.edu.au).

Thank you,

Kathryn Anthony-Benson
Student Researcher
University of Newcastle

Dr Sally Hunt
Chief Investigator
University of Newcastle

Concerns or complaints about this research

Human Research Ethics

Participant Information Statement and Consent

Anonymous surveys

This project has been approved by The University of Newcastle's Human Research Ethics Committee. Approval No. H-[insert the protocol reference number which will be identified in the written acknowledgement of your application].

If you have concerns about your rights as a participant in this research, or if you have a complaint about the manner in which the research is conducted, you can contact the Chief Investigator Dr Sally Hunt.

If you would prefer to contact someone independent of the research project, you can forward your concerns to:

Human Research Ethics Officer
Research and Innovation Services
University of Newcastle
University Drive
Callaghan NSW 2308, Australia
Phone: (02) 4921 6333
Email: Human-Ethics@newcastle.edu.au

Appendix D- Questionnaire

Introduction to the Alcohol use in pregnancy and later life assessment

Thank you for your interest in our study of alcohol use in pregnancy and later life. Before you commence the survey we would like to ask you some questions to establish your eligibility to participate.

SECTION A: Confirmation of Eligibility

A1. Are you aged between 40 and 60 years?

1= Yes

0= No (will direct to termination page)

A2. Do you identify as a woman?

1= Yes

0= No (will direct to termination page)

A3. Have you ever been pregnant?

1= Yes

0= No (will direct to termination page)

A4. Do you live in Australia?

1= Yes

0= No (will direct to termination page)

Note- Termination message reads:

The information you have given suggests that unfortunately this study is not suitable for you. Thank you for your time

Now that we have established your eligibility to participate in the study, and you have provided your informed consent, we would like to ask you some more questions about you, your lifestyle and experience of pregnancy. This process will take around 20 minutes.

SECTION B: Demographics

B1. What is your country of birth? (free text)_____

B2. What year were you born? (drop down boxes with years 1962-1982)

B3. Do you identify as Aboriginal and/or Torres Strait Islander?

0=Neither

1=Aboriginal

2=Torres Strait Islander

3=Aboriginal and Torres Strait Islander

4=Prefer not to say

B4. What is the highest qualification that you have obtained?

1=Left school prior to finishing

2=Secondary school qualification

3=Certificate

4=Bachelor's degree

5=Master's degree

6=PhD or higher

7= Other (specify) _____

B5. Do you currently have a job (inside or outside the home; tick all that apply)?

0=No job at present

1=Employed outside home full-time

2=Employed outside home part-time

3=Housework/"stay at home mum"

4=Studying

5=Retired

6=Volunteer

7= Casual employment outside the home

B6. What is your current relationship status?

0=Single, never married

1=Married

2=Living with partner

3=In a relationship

4=Separated

5=Divorced

6=Widowed

B7. What is your postcode?

(free text- numerical data only) _____

SECTION C: Substance use history

In this section we'd like you to tell us a little bit about your experiences with a range of substances.

C1.1 Have you ever used caffeine (e.g. coffee, tea, chocolate, energy drinks)?

0= No (if selects no then takes participant to next substance C2.1)

1= Yes

C1.2 How old were you (in years) the first time you tried caffeine?

_____ (numerical input only)

C1.3 How old were you (in years) when you began consuming caffeine regularly (I.e at least weekly)?

_____ (numerical input only)

C1.4 When was the last time you consumed caffeine?

1= Past few days

2= Past week

3= Past month

4 = Past 6 months

6 = Greater than 6 months ago

C1.5 Have you ever stopped using caffeine for a month or more?

0= No (if selects no then takes participant to next substance)

1= Yes

C1.6 (ask if yes to C1.5) Why did you choose to stop using caffeine?

(free text)_____

C2.1 Have you ever drunk alcohol?

0= No (if selects no then takes participant to next substance C3.1)

1= Yes

C2.2 How old were you (in years) the first time you drunk alcohol?

_____ years (numerical input only)

C2.3 How old were you (in years) when you began drinking alcohol regularly (i.e at least weekly)?

_____ years (numerical input only)

C2.4 When was the last time you dr~~a~~unk alcohol?

1= Past few days

2= Past week

3= Past month

4 = Past 6 months

6 = Greater than 6 months ago

C2.5 Have you ever stopped drinking alcohol for a month or more?

0= No (if selects no then takes participant to next substance)

1= Yes

C2.6 Why did you choose to stop drinking alcohol?

(free text)_____

C3.1 Have you ever used tobacco (e.g. cigarettes)?

0= No (if selects no then takes participant to next substance C4.1)

1= Yes

C3.2 How old were you (in years) the first time you tried tobacco?

_____ years (numerical input only)

C3.3 How old were you when (in years) you began consuming tobacco regularly (i.e at least weekly)?

_____ years (numerical input only)

C3.4 When was the last time you consumed tobacco?

1= Past few days

2= Past week

3= Past month

4 = Past 6 months

6 = Greater than 6 months ago

C3.5 Have you ever stopped using tobacco for a month or more?

0= No (if selects no then takes participant to next substance C4.1)

1= Yes

C3.6 Why did you choose to stop using tobacco?

(free text)_____

C4.1 Have you ever used cannabis?

0= No (if selects no then takes participant to section D)

1= Yes

C4.2 How old were you (in years) the first time you tried cannabis?

_____ years (numerical input only)

C4.3 How old were you (in years) when you began consuming cannabis regularly (I.e at least weekly)?

_____ years (numerical input only)

C4.4 When was the last time you consumed cannabis?

1= Past few days

2= Past week

3= Past month

4 = Past 6 months

6 = Greater than 6 months ago

C4.5 Have you ever stopped using cannabis for a month or more?

0= No (if selects no takes participant to section D)

1= Yes

C4.6 Why did you choose to stop using cannabis?

(free text)_____

SECTION D: Alcohol use during pregnancy

D1. How many times have you been pregnant?

(drop down box with numbers 1-15)

Pregnancy 1 (survey will auto-populate this according to the number of pregnancies)

This question will come up for each pregnancy.

Try to think about your life during this pregnancy. Bring to mind an image of what area you lived in, what your house or apartment looked like, who you lived with, whether you were working, and any other important features of this time.

D1.1 What year did you fall pregnant?

(free text- must be numerical input only)

D1.2 Was the pregnancy planned?

1= Yes

0= No

D1.3 As best you can remember, when did you discover you were pregnant? (how many weeks gestation)?

(drop down box with weeks 0-40)

D1.4 Did you drink alcohol while trying to become pregnant?

1= Yes

0= No

D1.5 Did you drink any alcohol during this pregnancy?

1= Yes

0= No (if selects no takes participant to question D1.14)

D1.6 After you conceived but before finding out you were pregnant, did you drink alcohol?

1= Yes

0= No

D1.7 Did you drink alcohol after finding out you were pregnant?

1= Yes

0= No

D1.8 During this pregnancy, how often did you drink alcohol in the first trimester (1-12 weeks)?

(drop down box Never/monthly/weekly/daily)

D1.9 During this pregnancy, how often did you drink alcohol in the second trimester (13-26 weeks)?

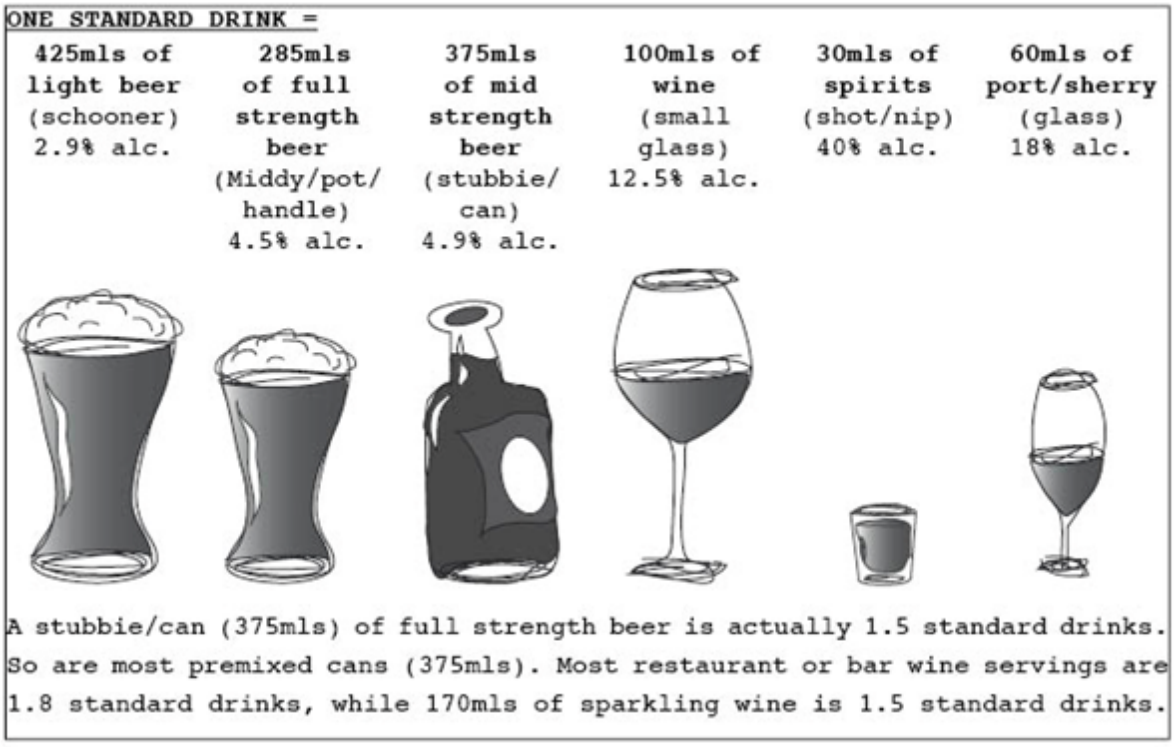
(drop down box Never/monthly/weekly/daily)

D1.10 During this pregnancy, how often did you drink alcohol in the third trimester (27 weeks – birth)?

(drop down box Never/monthly/weekly/daily)

D1.11 Did you ever drink more than 4 standard drinks on one day during this pregnancy?

A standard drink is a measure of alcohol. The volume of alcohol that makes up a standard drink varies depending on the type and strength of alcohol consumed. Use this table as a guide when answering the next question.



1= Yes

0= No

D1.12 Do you believe there was any impact on the child (that you were pregnant with) resulting from alcohol consumed while pregnant?

1= Yes

0= No (if selects no takes participant to question D1.14)

D1.13 What impact did you notice?

(free text) _____

D1.14 Do you recall what the guidelines (about alcohol use in pregnancy) were when you were pregnant?

1= Yes

0= No (if selects no takes participant to question D.1.16)

D1.15

What were they? (free text) _____

D1.16 BEFORE getting pregnant, do you recall being given information about whether you should make changes to your alcohol consumption during pregnancy?

1= Yes

0= No (if selects no takes participant to question D1.17)

D1.16.1 Where did you receive this information? (you can choose more than one)

(drop down box- health care professional, media, friends/family, books/pamphlets- can choose more than one)

D1.16.2 What was the advice (about whether you should make changes to your alcohol use during pregnancy)?

(drop down for- make no changes to alcohol consumption/reduce alcohol use/do not drink any alcohol during pregnancy)

D1.17 AFTER getting pregnant, do you recall being given information about whether you should make changes to your alcohol consumption during pregnancy?

1= Yes

0= No (if selects no takes participant to question D.1.18)

D1.17.1 Where did you receive this information? (you can choose more than one)

(drop down box health care professional, media, friends/family, books/pamphlets can choose more than one)

D1.17.2 What was the advice (about whether you should make changes to your alcohol use during pregnancy)?

(drop down for- make no changes to alcohol consumption/reduce alcohol use/do not drink any alcohol during pregnancy)

D1.18 During this pregnancy, were you given any other advice about alcohol use during pregnancy?

1= Yes

0= No (if selects no takes participant to question D1.19)

D1.18.1 What was this advice?

(free text)_____

D1.19 How did this pregnancy end?

1 = Live birth

2 = Early pregnancy loss (a miscarriage before reaching 20 weeks of pregnancy)

3 = Stillbirth (the pregnancy loss was after 20 weeks of pregnancy)

4= Loss of newborn (baby died soon after being born)

REPEAT ABOVE FOR ALL PREGNANCIES (will auto-populate in survey depending on how many pregnancies the mother reports in question 1)

Many people are unaware of the Australian guidelines for the use of alcohol during pregnancy. We are interested in this as it may help in directing services and information to pregnant women.

D2.1 Are you aware of the current guidelines for alcohol use in pregnancy (without looking this up)?

1= Yes

0= No (if selects no takes participant to question D.2.3)

D2.2 According to these guidelines, what level of alcohol use is considered safe and appropriate in pregnancy?

(drop down box- No use is safe during pregnancy/1-2 standard drinks per month/1-2 standard drinks per week/1-2 standard drinks twice per week/more than 1-2 standard drinks per week)

D2.3 What level of alcohol do you think is safe during pregnancy?

(drop down box- No use is safe during pregnancy/1-2 standard drinks per month/1-2 standard drinks per week/1-2 standard drinks twice per week/more than 1-2 standard drinks per week)

D.2.4 Is there anything else you would like to say about alcohol use during pregnancy?

1= Yes

0= No (if selects no takes participant to section E)

D.2.5 What else would like to say about alcohol use during pregnancy?

(free text) _____

SECTION E: Current Alcohol use

Because alcohol use can affect your health we are interested in your use of alcohol. Your answers will remain confidential so please be honest. Please select the option that best describes your answer to each question.

E1. How often do you have a drink containing alcohol?

1= I have not drunk alcohol in the last 12 months (is answers never will take participant to a thankyou page)

2= Monthly or less

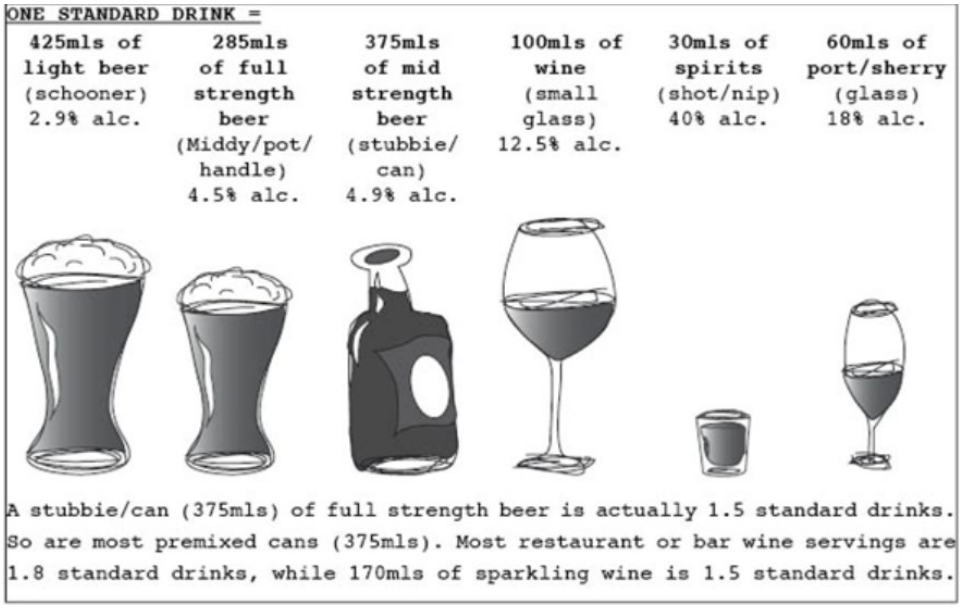
3= 2-4 times a month

4= 2-3 times a week

5= 4 or more times a week

E2. How many drinks containing alcohol do you currently have on a typical day when you are drinking?

A standard drink is a measure of alcohol. The volume of alcohol that makes up a standard drink varies depending on the type and strength of alcohol consumed. Use this table as a guide when answering questions about alcohol use.



1= 1-2

2= 3-4

3= 5-6

4= 7-9

5= 10 or more

E3. How often do you currently have six or more drinks on one occasion?
(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E4. How often during the last year have you found that you were not able to stop drinking once you had started?

(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E5. How often during the last year have you failed to do what was normally expected of you because of drinking?

(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E7. How often during the last year have you had a feeling of guilt or remorse after drinking?

(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E8. How often during the last year have you been unable to remember what happened the night before because of your drinking?

(Drop down boxes with never, less than monthly, monthly, weekly, daily or almost daily)

E9. Have you or someone else been injured because of your drinking?

(Drop down boxes with no, yes but not in the last year, yes during the last year)

E10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?

(Drop down boxes with no, yes but not in the last year, yes during the last year)

E11. During the past month, how often did you drink alcohol?

(Drop down boxes with between 6-7 days each week, between 4-5 days each week, between 2-3 days each week, one day each week, one day each fortnight, one day each month, not in the last month)

E12. On what day did you last drink alcohol?

(brings up calendar to insert date)

E13. How much alcohol did you drink that day (how many standard drinks)?

(Brings up sliding scale of 1-100)

E14. On which day before that did you drink alcohol?

(brings up calendar to insert date)

E15. How much alcohol did you drink that day (how many standard drinks)?

(Brings up sliding scale of 1-100)

E16. Would this be a typical pattern of drinking?

(Drop down boxes of yes, no more than usual, no less than usual)

If answers yes the participant will be taken to thankyou page

E17. If No, what would be a typical pattern of drinking?

(Free text)

Thank you for completing the Alcohol in Pregnancy and Later life survey!

If you would like a copy of the summary of the results when the study is completed, which should be in December, 2022, please indicate below and provide an email address for us to send this to. This email will not be linked to your responses on the questionnaire

I would like to receive a summary of results:

Yes

No

If Yes, please leave an email address where we can send the results:

Email:_____

Sometimes answering questions like these can bring up strong feelings or memories. If you have found this or have general concerns about your mood, alcohol or substance use then a good place to start is to talk to your GP.

There are also a range of telephone and online supports available that you can access right now.

If you are in a crisis situation or need immediate assistance please use the below hotlines:

Lifeline: 131114; http://www.lifeline.org.au/

Lifeline also offers online support and counselling, so please access their website if you prefer this option.

Below are some other online resources that you may find helpful:

Beyondblue:

www.beyondblue.org.au

SANDS
https://www.sands.org.au/
1300 07 2637
This service offers support for people who have experienced early pregnancy loss, newborn deaths or stillbirths.

For concerns about your drinking, please consult your doctor or local community health service. Alcohol or other drug helplines are also currently available in the following states and territories.

• Australian Capital Territory

24-hour Alcohol and Drug Telephone Line

(02) 6207 9977

• New South Wales

Alcohol and Drug Information Service

(02) 9361 8000

1800 422 599 (rural)

• Northern Territory

Alcohol and Drug Information Service

1800 131 350 (NT only)

Darwin (08) 8922 8399

Alice Springs (08) 8951 7580

• Queensland

Alcohol and Drug Information Service

1800 177 833 (24-hour, Queensland only)

• South Australia

Alcohol and Drug Information Service

1300 131 340 (SA only)

Adelaide (08) 8363 8618

• Tasmania

24-hour Alcohol and Drug Information Service

1800 811 994

• Victoria

DirectLine 1800 888 236

DrugInfo 1300 858 584

Family Drug Helpline 1300 660 068 (VIC only)

Youth Drugs and Alcohol Advice 1800 458 685

• Western Australia

Alcohol and Drug Information Service

(08) 9442 5000

1800 198 024 (rural WA only)

Parent Drug Information Service

(08) 9442 5050

1800 653 203 (rural WA only)

Appendix E- Advertising materials

Images (rights for all images have been obtained)

Paid and unpaid promotion of the study used combinations of the following texts on social media platforms Facebook and Instagram.

- Australian mums we want to hear from you!
- Female? Aged 40-60? Been pregnant before? Living in Australia?
- Are you a woman aged between 40 and 60 years of age, living in Australia and previously been pregnant?
- If you are a woman who is aged between 40 and 60 years, have previously been pregnant and are currently living in Australia, we would love to hear from you.
- Help us understand the relationship between alcohol use in pregnancy and women's use of alcohol later in their lives.
- We want to hear all about it! Click the link to participate in research from the University of Newcastle.
- Researchers from the University of Newcastle are exploring the relationship between alcohol use in pregnancy and alcohol use later in women's lives.
- To share your thoughts, click the link and fill out the survey.
- Participate here.
- If yes to all these questions, We need your help!
- We want to hear from you!
- Click the link to fill out the survey.
- Click the link to find out more.
- To participate, click the link and fill out the survey.

e.g.

"Are you a woman aged between 40 and 60 years of age, living in Australia and previously been pregnant? Help us understand the relationship between alcohol use in pregnancy and women's use of alcohol later in their lives. Click the link to fill out the survey"

"Researchers from the University of Newcastle are exploring the relationship between alcohol use in pregnancy and alcohol use later in women's lives. If you are a woman who is aged between 40 and 60 years, have previously been pregnant and are currently living in Australia, we would love to hear from you. To share your thoughts click the link and fill out the survey"

"Female? Aged 40-60? Been pregnant before? Living in Australia?
We want to hear from you! Click the link to fill out the survey"

"Female? Aged 40-60? Been pregnant before? Living in Australia?
If yes to all these questions, We need your help! (survey link)"

Examples of ad as it appeared on social media: