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ALCOHOL GUIDELINES FOR PREGNANT WOMEN

Barriers and enablers for midwives to deliver advice

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Authors

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Acknowledgements

The authors would like to dedicate this report to Pip Williams, member of the stakeholder group, who sadly passed away before this study was completed. Pip was a strong advocate for FASD birthmothers and those living with FASD themselves and worked incredibly hard to raise awareness of the issues women with lived experience of addiction face. She was an inspiring, strong, dedicated, and compassionate woman and her legacy will continue to inspire people in the field. We are deeply grateful for the input she had in this study and we will miss her.

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Executive summary

Background

Alcohol exposure during pregnancy can have negative maternal and infant outcomes. Due to a lack of clear evidence of a 'safe' threshold for alcohol consumption during pregnancy, the UK Chief Medical Officers (CMOs) revised their guidance in 2016 to advise pregnant women to abstain completely from alcohol. Furthermore, primary prevention in antenatal care, through screening and brief intervention, has been set as a priority by the World Health Organization (WHO). Midwives are key to achieving these aims, but little is known about the extent to which UK midwives are aware of, and implement, the CMO guidelines. Moreover, there is a lack of knowledge about barriers to implementing the guidelines.

Methods

The aim of this study was to explore knowledge and implementation of the CMO guidelines amongst UK midwives. A mixed-methods design was used to explore implementation barriers and midwives' beliefs about addressing alcohol during antenatal care with pregnant women. The study drew on the Theoretical Domains Framework (TDF) and included i) an online survey, and ii) interviews and focus groups with midwives. Midwives were recruited through professional networks and advertisements on social media. Questionnaire data were analysed using SPSS version 25, summarising midwives' knowledge and practices regarding implementation of the CMO guidelines and behavioural determinants of advising women to abstain from alcohol. Multivariable logistic regression was used to examine the association between each of the TDF domains and advising all women to abstain at appointments other than booking. The qualitative data were analysed thematically, using Nvivo 12, to gain a deeper understanding of midwives' practices, views and beliefs about discussing alcohol.

Results

The final survey sample for the quantitative phase was 842 and for the qualitative phase 22. The survey showed that 58% of midwives were aware of the CMO guidelines, of whom 91% reported that alcohol abstinence was advised within the guidelines. However, a variety of other responses were also given in line with previous national guidelines. The qualitative data showed that midwives may be aware of the recommendations within the CMO guidelines, but less aware of their named source. Furthermore, midwives were supportive of the guidelines and agreed with the underpinning rationale of the 'precautionary principle'. The incorrect identification of CMO guideline content found by the survey was perceived to be due to midwives commonly referring to NICE guidelines, which until December 2018 included outdated recommendations.

Most midwives (97%) reported 'always' or 'usually' advising all women to abstain at booking, dropping to 38% at other appointments. Qualitative findings indicated that time pressures and the lack of an established relationship at booking influenced how thoroughly alcohol was covered. Some argued that sensitive topics could be better addressed once a relationship with the woman has been established, but all agreed that clear information on alcohol should be provided on initial contact to enable women to make an informed choice. Few midwives used validated screening tools, many focused on 'open conversations' that were non-judgemental to encourage disclosure.

Analysis of the TDF domains from the survey showed that barriers to implementing abstinence advice at appointments other than booking were: women disliking being advised (social influences); not feeling confident (beliefs about capabilities domain); and not feeling the advice will have any impact (beliefs about consequences). Domains that facilitated delivering abstinence advice were: wanting and intending to advise women (goals); seeing it as part of the midwifery role, and that it is

expected (professional role and identity). The logistic regression analysis found significantly reduced likelihood of midwives advising abstinence if they disagreed that providing advice was expected of them and was part of their job (OR=0.69, 95% CI: 0.51, 0.95), lacked self-efficacy to inform women about alcohol consumption (OR 0.71, 95% CI: 0.57, 0.88), and emotional factors such as not feeling that it is rewarding to advise women (OR=0.78, 95% CI: 0.67, 0.90). The qualitative findings further emphasised that effective communication skills and knowledge of alcohol-related harm associated with drinking during pregnancy were key to feeling confident in providing advice.

The survey found that 69% of midwives had received fewer than four hours of alcohol training pre-qualification and 19% had received none. Post-qualification, 33% of midwives had not received any alcohol-related training and only 25% were offered this within annual updates. The qualitative findings showed a perceived lack of training within undergraduate programmes, however midwives believed alcohol might be better covered within current curricula. Most midwives reported 'usually' or 'always' recording the advice to women and midwives felt that standardised questions can de-stigmatise the topic.

Conclusions

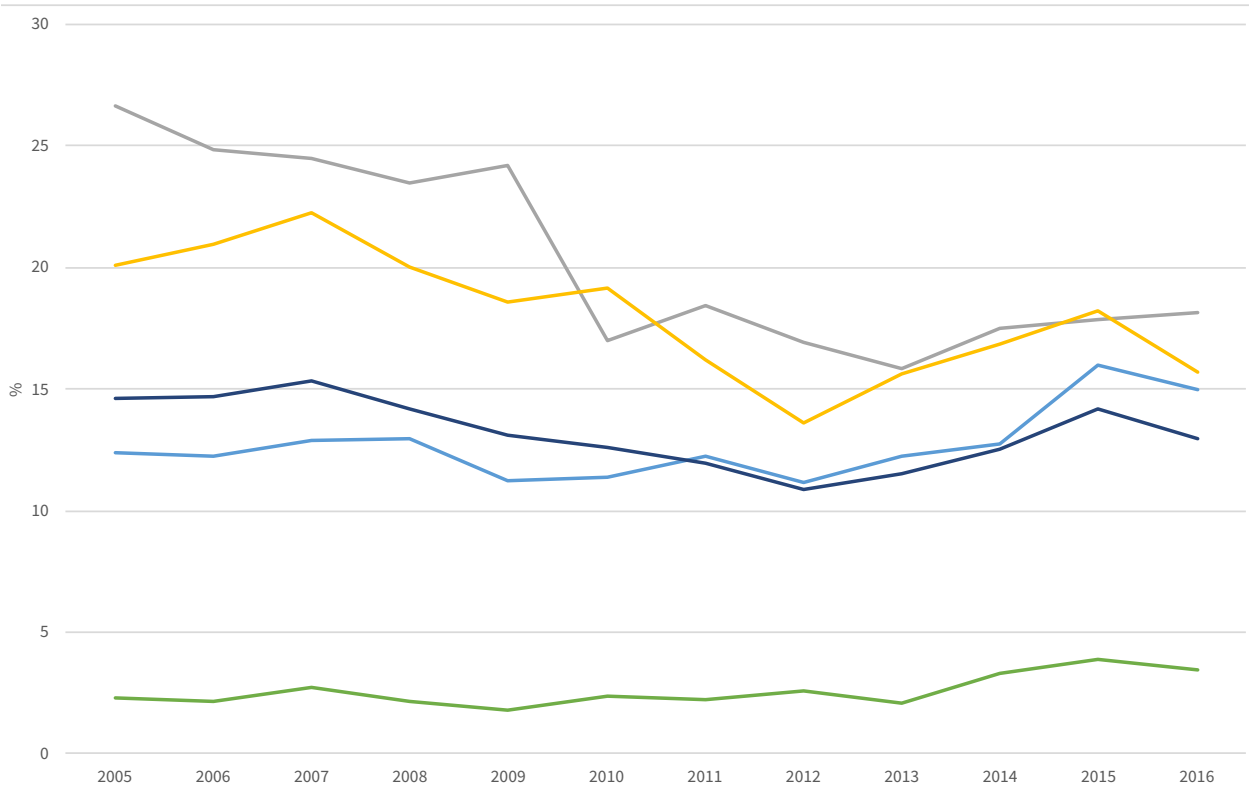
This study shows that awareness specifically of the CMO guidelines was lacking amongst midwives. It is worth noting that these guidelines were introduced before a change was made to the National Institute for Health and Care Excellence (NICE) guidelines and for a period of about three years these two guidelines, containing different advice, were available concurrently. However, the advice that was provided was in line with the CMO guidelines by most midwives during the booking appointment, but not routinely at later appointments. There is no standardised approach to addressing alcohol consumption during antenatal appointments meaning that assessment and recording of alcohol consumption is inconsistent across the UK and within each country. Midwives accept the guidelines in principle and believe that it is important for women to be supported to make informed choices. Use of the TDF helped factors that influenced midwives' alcohol-related practices. Findings suggest that interventions aimed to improve midwives' knowledge, skills and clinical confidence to deliver alcohol advice appropriate for the level of risk of the woman's drinking may facilitate midwives' practices.

Background

Alcohol use and associated harm

The overall per capita alcohol consumption in the UK has declined from 12.3 litres of pure alcohol in 2010 to 11.5 litres in 2016. A decline has also been evident among women, from 5.4 to 4.8 litres. However, according to 2016 data, 22% of women consumed alcohol in heavy episodic patterns (WHO, 2018a).[1] With decreased overall consumption, a decrease in heavy episodic drinking (HED, also known as binge drinking) is evident among women.[2] Figure 1 shows data for Great Britain, which indicates a fall in HED in the overall population, from 15% in 2005 to 13% in 2016 among women aged >16 years, with the sharpest decline in the 16–24-year group (27% to 18%, respectively). A decrease among women aged 25–44 years is also evident (from 20% to 16%, respectively) whilst there has been a small increase in the age groups over 45 years. An increasing trend is evident from 2012. Among drinkers, however, the decrease in HED has been smaller and 41% of 16–24-year-olds and 31% of 25–44-year-olds reported consuming more than six units on their heaviest drinking day in the last week (ONS, 2017).

Figure 1. Heavy episodic drinking 2005–2016 in Great Britain (ONS, 2017).



In terms of harm attributable to alcohol, the Global Burden of Disease study (GBD) showed that in 2016, 6% of deaths among men and 4% among women in the UK were due to alcohol, which is higher than the global rate of 7 and 2%, respectively. However, for disability-adjusted life years (DALYs), the proportion attributable to alcohol were the same for men and women; both 5% and slightly lower than the global rate of 6% for both sexes. Among women, the highest proportion of alcohol-attributable deaths were among those aged 50–54 years (6%) and 55–59 years (6%). The highest proportion of DALYs were in the age groups 35–39, 40–44, 45–49 and 50–54 years (14%, 15%, 15%

1 Consuming >60 grams of pure alcohol in one occasion in the past 30 days
2 Consuming >6 units (48 grams of pure alcohol) in the last week

and 14%, respectively). However, among women aged 20–24, 25–29, and 30–34 the proportion of DALYs attributable to alcohol were 9%, 9% and 11%, respectively, indicating a significant impact on morbidity in women of reproductive age (GBD 2016 Alcohol Collaborators, 2018). Within the UK, however, there are differences in the harm associated with alcohol. For the year 2017/2018, alcohol-related hospital admissions among women were 473 per 100,000 in England (PHE, 2019), 374 per 100,000 in Scotland (ISD Scotland, 2018), and 322 per 100,000 in Wales (Public Health Wales, 2019).

Alcohol use during pregnancy

While data on alcohol consumption among women in the general population is routinely collected through, for example, the Opinions and Lifestyles Survey (ONS, 2019), no routine data is collected on alcohol use during pregnancy at a UK level. Survey data on prenatal alcohol use is also scarce. The UK-wide Infant Feeding Survey (IFS) collected information on alcohol use during pregnancy retrospectively among new mothers and the last iteration of the survey was published in 2010, after which it was discontinued. The 2010 data showed that any alcohol use in pregnancy was 41% in England and 35% in Wales, Scotland and Northern Ireland (McAndrew et al., 2012). Following discontinuation of the IFS, Scotland initiated the Scottish Maternal and Infant Nutrition Survey (MINS). The first iteration of the survey was published in 2017 and showed that since becoming pregnant, 46% of women had consumed any alcohol. However, when the question only covered the period from pregnancy confirmation, the prevalence reduced to 12%, of which the majority reported drinking monthly or less. A systematic review and meta-analysis, published in 2017, collated available data for the UK to estimate the prevalence of any alcohol use during pregnancy. A pooled prevalence estimate for the UK was produced through specific random-effects meta-analyses of quantitative studies published in peer-reviewed journals or scholarly reports. The pooled estimate of any alcohol use was 41.3% (95% CI: 32.9, 49.9) (Popova et al., 2017).

Alcohol consumption during pregnancy is of public health importance, due to the significant impact alcohol exposure can have on the developing fetus (BMA, 2015). Risks associated with alcohol use during pregnancy include miscarriage, preterm birth and low birthweight, but may also impact on growth and neurodevelopment, known as Fetal Alcohol Syndrome (FAS). Since first diagnosed in the 1970s (Jones and Smith, 1975), research has continued to document the sustained impact of alcohol exposure during pregnancy. A broader range of birth defects have been identified, which does not necessarily manifest in the physical dysmorphology associated with FAS. These outcomes are captured under the umbrella term Fetal Alcohol Spectrum Disorders (FASD) (Jones, 2011). The most recent estimates, which for the first time has produced a global prevalence rate, indicate that 7.7 per 1,000 population (children and youth) have FASD. Overall, the estimate means that one in 13 women who drink will deliver a child with FASD. However, prevalence is significantly higher in specific populations than the general population, including aboriginal populations, correctional system, adopted children, and populations of lower socioeconomic status (SES). The WHO European Region has the highest rate, estimated at 19.8 per 1,000 population, with a considerably higher estimate for the UK (32.4 per 1,000, 95% CI: 20–49) (Lange et al., 2017).

Communicating risk through drinking guidelines

At population level, a number of evidence-based alcohol policy interventions support changing drinking behaviour and reducing harm (WHO, 2010). The World Health Organization (WHO) state that the strongest evidence for reducing overall consumption and subsequent harm are: i) to increase alcohol taxes, ii) restrict availability to alcohol, and iii) introduce bans on alcohol advertising (WHO, 2017). While these alcohol control policies are effective and cost-effective interventions, several other approaches with a weaker evidence base are commonly part of national strategies. One such strategy is drinking guidelines, that is a recommendation for keeping risk of harm at a low level, and

are in place in many countries. Over time guidelines have progressively recommended lower levels of alcohol intake, as evidence for the risk of conditions such as cardiovascular disease and other chronic diseases (such as cancer) has become stronger (Babor et al., 2010). While estimations suggest that harm could be avoided if everyone drank within recommended guidelines (Stephanie W. Young et al., 2018), the question remains whether drinking guidelines are indeed effective in changing behaviour.

The 2012 UK Alcohol Strategy, tasked the CMO to carry out a review of the alcohol drinking guidelines and issue recommendations for people to "make responsible and informed choices about their drinking" (p. 27) (HM Government, 2012). As a result, the adult weekly recommended limit was set at 14 units for both men and women, whereas the pregnancy drinking advice was revised to a clear abstinence message (Department of Health, 2016). Within the 2018 Scottish Alcohol Framework, the Scottish Government committed to increasing awareness around the drinking guidelines through a national campaign (Scottish Government, 2018), which was launched in May 2019 (NHS Health Scotland and The Scottish Government, 2019). The pregnancy guidelines have changed over time (see box 1), become more detailed, and now adopt a precautionary approach in the absence of clear evidence showing the effects of low-level drinking (see box 1). Yet, the updated guidelines state that consumption of small amounts before pregnancy recognition is unlikely to be a risk to the unborn baby. In contrast, the 1995 guidelines only mentioned reducing risk by drinking no more than 1–2 units once or twice per week and avoiding intoxication, but did not mention abstinence (Department of Health, 1995). This progressed within the alcohol strategy Safe Sensible Social, where the limit remained but abstinence was included as the main advice (Department of Health, 2007). In 2008, the National Institute for Health and Care Excellence (NICE) added further detail by focusing on the first trimester as the most sensitive to alcohol exposure. These guidelines remained until December 2018, when the recommendation was withdrawn and replaced with references to the CMO guidelines (NICE, 2008a).

Box 1. Pregnancy drinking guidelines in the UK

Sensible Drinking Guidelines (1995)

To minimise risk to the developing fetus, women who are trying to become pregnant or are at any stage of pregnancy, should not drink more than 1 or 2 units of alcohol once or twice a week, and should avoid episodes of intoxication.

Safe Sensible Social – Next steps in the National Alcohol Strategy (2007)

Pregnant women or women trying to conceive should avoid drinking alcohol. If they do choose to drink, to protect the baby they should not drink more than 1–2 units of alcohol once or twice a week and should not get drunk.

NICE Guidelines CG62, 2008

Pregnant women and women planning a pregnancy should be advised to avoid drinking alcohol in the first 3 months of pregnancy if possible because it may be associated with an increased risk of miscarriage.

If women choose to drink alcohol during pregnancy they should be advised to drink no more than 1 to 2 UK units once or twice a week (1 unit equals half a pint of ordinary strength lager or beer, or one shot [25 ml] of spirits. One small [125 ml] glass of wine is equal to 1.5 UK units). Although there is uncertainty regarding a safe level of alcohol consumption during pregnancy, at this low level there is no evidence of harm to the unborn baby.

Women should be informed that getting drunk or binge drinking during pregnancy (defined as more than 5 standard drinks or 7.5 UK units on a single occasion) may be harmful to the unborn baby.

CMO Guidelines, 2016

- If you are pregnant or think you could become pregnant, the safest approach is not to drink alcohol at all, to keep risks to your baby to a minimum.
- Drinking in pregnancy can lead to long-term harm to the baby, with the more you drink the greater the risk.

The risk of harm to the baby is likely to be low if you have drunk only small amounts of alcohol before you knew you were pregnant or during pregnancy. If you find out you are pregnant after you have drunk alcohol during early pregnancy, you should avoid further drinking. You should be aware that it is unlikely in most cases that your baby has been affected. If you If you are worried about alcohol use during pregnancy do talk to your doctor or midwife.

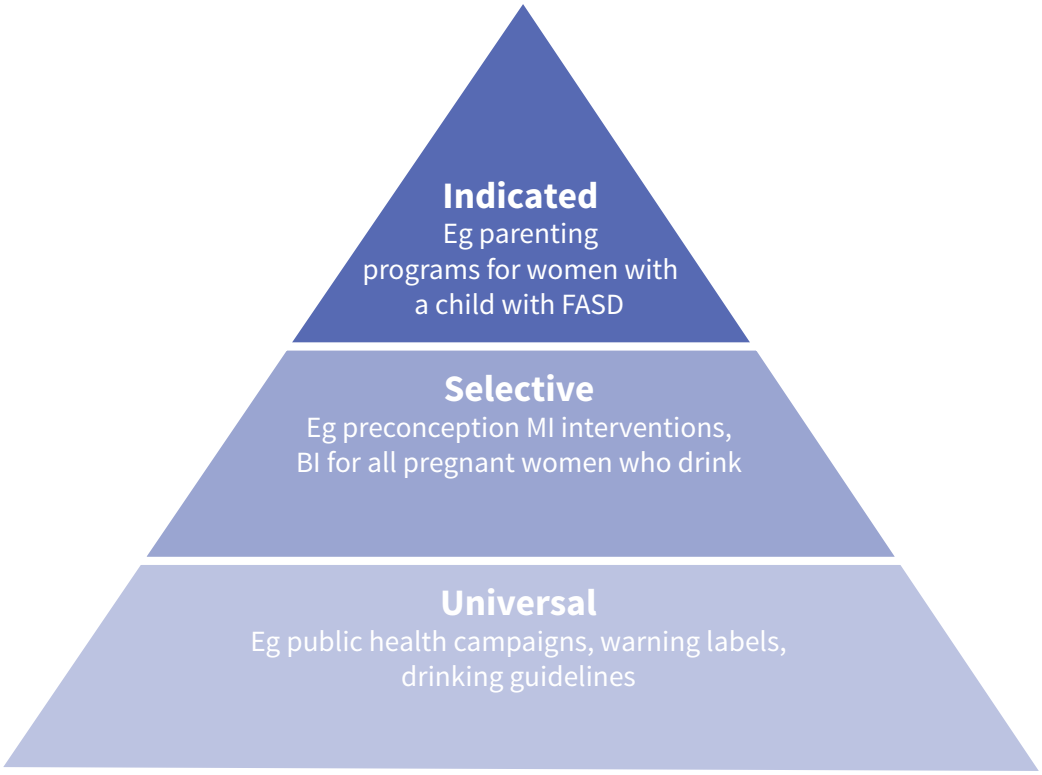
The shift in recommendations to pregnant women from the 1995 guidance towards the increased focus on abstinence in 2007 has been critiqued (Gavaghan, 2009; Lowe and Lee, 2010). The underpinning rationale and the use of evidence to support an increasingly stricter policy has been described as a "reorientation of policy in relation to definitions of risk and uncertainty" (Lowe and Lee, 2010, p. 309). Lowe and Lee argued that the progressively stricter recommendations, which in 2007 included abstinence as part of the advice, is not an evidence-based interpretation of the level of risk but shows the potentially moralised way in which pregnancy and parenting is framed (Lowe and Lee, 2010). Within the UK, however, the shift towards abstinence has not occurred simultaneously. In Scotland, the CMO has advised abstinence since 2010 (NHS Health Scotland, 2010), which was noted in a House of Commons Report in 2012 stating that "consistency of advice across the UK would be desirable" (House of Commons Science and Technology Committee, 2012, p. 21). The Welsh CMO also spoke out in favour of an abstinence message before the UK-wide update 2016 (IAS, 2015), and an alcohol liaison midwifery service set up in Northern Ireland in 2013 also endorsed an abstinence message before the changes to the official guidelines (Reid and McStay, 2018).

The revised CMO guidelines were designed with the intention of a simple message for abstinence, reflecting the uncertainty in the evidence around risk at drinking at low levels. Brown and Trickey (2018) undertook a document analysis of the revised guidelines and focus groups with key stakeholders to explore how the rationale for the shift in recommendation was interpreted. The authors argued that the guideline documents did not clearly provide a rationale behind the 'precautionary principle', suggesting it was open to interpretation. Some participants therefore suggested the advice was aimed at specific subpopulations, for example women with lower education levels. Overall, midwives were in favour of the clear message of the guidelines whereas other stakeholders argued the accuracy of the message was diluted and noted there is a risk of distress among women who have consumed alcohol before knowing about the pregnancy. The simple message intended in the revised guidelines, therefore, was not perceived as such and led the authors to conclude that considering the best way of communicating the guidelines will be important to ensure it reaches the intended population and has an impact on behaviour.

Preventing harm caused by prenatal alcohol exposure

Preventing harm from alcohol exposure during pregnancy can be divided into three levels; universal, selective and indicated (figure 1) (Clarren et al., 2011). Universal prevention aims at the general population, including pregnant women, to increase awareness around risks associated with alcohol use during pregnancy and change behaviour through means such as wider public health campaigns. Overall, the evidence for public health campaigns is limited – they can reach a wider audience and stimulate discussion or change knowledge and attitudes, but there is little evidence they change behaviour (Young et al., 2018). Furthermore, framing of the message may be important and campaigns raise a number of ethical issues as they may have unintended consequences if the framing alienates or stigmatises women who, for example, have an alcohol problem (Crawford-Williams et al., 2015a; Schölin, 2016). Another universal prevention strategy is the use of warning labels with a specific 'no alcohol during pregnancy' message, which is only a legal requirement in 14% of WHO Member States, globally (WHO, 2018b). As with public health campaigns, the evidence around warning labels is limited. Thomas et al. (2014) reviewed the evidence for warning labels as a means for preventing FASD. They found that most studies explored outcomes relating to awareness or knowledge of risk, rather than actual drinking behaviour. The review also found that the effects of warning labels may wear off over time and that they may have an effect on women who are light drinkers, but less so on heavy drinkers. However, regular heavy drinkers appear more aware of warning labels (Thomas et al., 2014).

Figure 2. Levels of prevention of prenatal alcohol use (adapted from Clarren et al., 2011).



Selective interventions target a specific population, such as all pregnant women or women of reproductive age who drink alcohol and at risk of becoming pregnant (Ospinna et al., 2011). For non-pregnant women, a body of literature shows that Motivational Interviewing (MI) interventions, aimed at women at risk of having an alcohol-exposed pregnancy (AEP),[3] have had promising results in reducing risk through modification of drinking habits and contraception use. Importantly, some interventions show a greater effect on modifying contraception use than modification of drinking behaviour (Ingersoll et al., 2013). For pregnant women, the WHO Guidelines for the identification and management of substance use and substance use disorders recommends that all women are asked about their alcohol use at every visit, as they emphasise how a trusting relationship might take time to build up for women to feel able to disclose their drinking. Furthermore, the WHO guidelines reviewed the evidence for screening and brief interventions in antenatal care settings and concluded that whilst the quality of the evidence is low, the recommendation to provide a brief intervention to women who drink (unless they need referral to specialist services) is high (WHO, 2014). The limited evidence has also been summarised in systematic reviews, which show that whilst there is some evidence that brief interventions can reduce the number of drinks and drinks per drinking day for women who drink at high levels, aspects such as involving their partner might enhance such effects (Gilinsky et al., 2011; Stade et al., 2009). An important explanation for null results in many studies is that 'standard maternity care' may be a sufficient intervention for some women to change their drinking behaviour (Schölin, 2016).

Finally, indicated interventions focus on women who are at high risk of having an AEP, and subsequently high risk of related harm, due to high levels of drinking or that they have a history of alcohol use during pregnancy or a child with FASD (Clarren et al., 2011). Indicated prevention efforts might include focusing on substance misuse problems in a holistic context, addressing underlying causes. The Parent-Child Assistance Programme (PCAP) was developed in the 1990s in Seattle,

3 Risk of an AEP is defined as drinking at risky levels (high frequent intake or heavy episodic drinking) and having had unprotected sex with a male partner

Washington, and aimed to prevent alcohol- or drug-exposed pregnancies among women who i) had consumed alcohol/taken drugs in previous pregnancies, and/or ii) had a child with an FASD diagnosis. The three-year intervention is summarised as "individually tailored, promotes the competency of the client, uses a relational approach to deliver services, it is family-centred, community-based, and multidisciplinary" (p. 195). Evaluation outcome data has shown reduced risk of subsequent exposed pregnancies, completion of treatment, use of family planning methods, and social aspects such as increased employment and stable housing. Economic evaluation of PCAP suggest that each one avoided case of FAS could fund 102 women through the programme (Grant, 2010). Whilst programmes such PCAP are high intensity and resource intense, it signifies the additional support women with substance misuse problems need alongside substance use treatment. Furthermore, it emphasises the complexities surrounding substance use during pregnancy and the wider social determinants that need to be addressed to reduce harm.

Maternity policy and practice

Improving maternity care to reduce perinatal and maternal mortality has been identified as a priority through working proactively with prevention and early interventions (Knight et al., 2018). Within the UK, a number of policy frameworks set out the agenda for maternity services in reducing mortality and ill health, including Healthy Beginnings (Public Health England, 2019), Best Start (Scottish Government, 2017), A Strategic Vision for Maternity Services in Wales (Welsh Government, 2011), and the Northern Irish Maternity Strategy (AgendaNI, n.d.). These documents provide evidence and guidance for health and social care professionals to implement early intervention to reduce long-term health care costs. The key focus of the maternity policies is to ensure that each contact with the midwife counts and to take the opportunity to implement preventative measures for a healthy pregnancy. The Royal College of Midwives (RCM), in particular, has emphasised working within a public health model to empower women to make choices about their care and to reduce risks to themselves and to their baby. One of the key aspects of implementing a public health model within maternity services is the importance of addressing certain topics with all women accessing maternity care, which includes alcohol consumption during pregnancy (RCM, 2017). Additionally, there are national guidelines that inform the practices of health professionals working within maternity services that recommend alcohol consumption is discussed at the first contact with women, along with discussions around other behaviours, such as smoking (NICE, 2010, 2008a).

The NHS Long Term Plan sets out to strengthen the NHS's contribution towards prevention and tackling health inequalities, with specific action highlighting the need for providing additional support for expectant mothers at risk of premature birth and with mental health conditions. Both premature birth and mental health problems are associated with alcohol misuse (NHS, 2019). This builds upon the public health opportunities identified in Maternity Transformation Programme Workstream 9, which focuses on a range of initiatives to improve wellbeing, reduce risk, and tackle inequalities from preconception to 6–8 weeks postpartum (NHS, n.d.). In addition, the Saving Babies' Lives care bundle was launched by the Maternity Transformation Programme, endorsed by the RCM and the Royal College of Obstetricians and Gynaecologists (RCOG). The bundle encompasses reinforced recommendations around public health information and reducing smoking, where alcohol is mentioned as part of 'Safe and Healthy Pregnancy Information' that practitioners are instructed to provide to pregnant women (NHS England, 2019).

Midwives' engagement with discussing alcohol

Antenatal care is an important setting for health promotion, health improvement, and harm prevention. Previous research has reported on the extent to which midwives engage with and advise pregnant women on alcohol. An Australian study found that under a 'low risk' guideline, 87% of midwives advised women to abstain and a smaller proportion gave recommendations regarding maximum limits and intoxication (Payne et al., 2005). A later study, undertaken after the official recommendations changed to complete abstinence, showed that 99% of midwives advised women according to the guidelines (Payne et al., 2014). A similar shift has also been evident in research from Denmark, where the official guidelines changed in 2007 to recommending abstinence. A pre- post survey showed an increase in midwives who recommended abstinence and there was also a shift in stricter their attitudes of whether women should abstain (Kesmodel and Kesmodel, 2011). A Canadian study of medical, nursing and midwifery students found that a no alcohol message was endorsed with reference to the uncertainty of risk at a given level. Participants however noted that they would not worry if a patient had consumed alcohol before knowing about the pregnancy, noting that it is common, and the risk of harm would be low. This indicated a discord between beliefs about the guidelines and that some alcohol would be acceptable. Providing information was seen as key, with midwifery students strongly emphasising women's right to informed choice (Coons et al., 2017).

While official guidelines may play part in the advice given, it is important to consider the impact of midwives' attitudes towards pregnant women's drinking. Crawford-Williams et al. (2015b) found that midwives questioned the evidence behind the abstinence-based Australian guidelines, despite being generally supportive of the message that no alcohol is the safest option for pregnant women. Similarly, a study from The Netherlands found that the majority of midwives gave advice in line with abstinence-based guidelines, however interviews with women and partners suggested many had been informed by their midwife that some alcohol was not considered to be harmful (van der Wulp et al., 2013). Further discord between midwives' and women's perceptions has been shown from qualitative work in Australia. While midwives reported routinely asking women about alcohol, women perceived the conversation to be limited, focused on the initial appointment, and not revisited later. Furthermore, information about risks was deemed to be limited to women who reported drinking at high levels (Jones et al., 2011).

Research has shown that screening practices vary and there is evidence to suggest that despite the international recommendation to use a validated screening tool (WHO, 2014), many midwives prefer to have a conversation without the structure of formal screening (Wangberg, 2015). Survey data from the UK showed that whilst a majority of midwives enquired about alcohol consumption, most did not use a validated tool (Howlett et al., 2019). The use of standardised or mandatory questions may facilitate asking women about their alcohol use. In a study from the East of England, 60% of midwives routinely asked about alcohol, however, only 29% routinely provided alcohol advice (Winstone and Verity, 2015). Lack of a national requirement for routinely collecting information on alcohol use for monitoring consumption data might influence the routine enquiry and recording, however behavioural factors in midwives' practice may also play part. Watkins et al (2015) found that the behavioural domains midwives were most positive about were their capacity and effectiveness of providing advice, which were associated with their intention to ask all pregnant women about their alcohol use. Midwives who had recently (within the last two years) undertaken brief intervention training had more positive beliefs about capacity, as did those who used a recommended screening tool. Midwives who met women early on in pregnancy, that is during the first trimester, had more positive beliefs about capacity and effectiveness than midwives who saw women later in pregnancy.

Midwives need evidence-based guidelines to inform their practice to implement effective prevention strategies and interventions. To our knowledge, no study to date has assessed the knowledge and behavioural determinants of UK midwives' practices regarding the CMO drinking guidelines. The CMO guidelines were updated after a review of the evidence and concluded the absence of clear evidence of harm associated with lower levels of drinking supported a complete abstinence advice. Developing an understanding of how UK midwives use the CMO guidelines to inform their practice would therefore provide new knowledge around how alcohol is addressed in antenatal care and what potential barriers may hinder midwives from implementing the recommendations stated in the guidelines.

Research aim

The aim of the study was to gain an understanding of midwives' practices of assessing pregnant women's alcohol use and communication of the 2016 Alcohol Drinking Guidelines in antenatal care across the UK.

Objectives

- To determine to what extent UK midwives are aware of the CMO guidelines
- To explore how the guidelines are implemented among UK midwives
- To identify factors that influence midwives' practice behaviour in relation to asking and advising about alcohol use in pregnancy
- To explore how midwives can be supported in their practice

Methods

This study adopted a mixed-methods approach, utilising a sequential explanatory design (Ivankova et al., 2006). The quantitative phase of the study comprised of a cross-sectional survey of practicing midwives in England, Wales, Scotland and Northern Ireland informed by the Theoretical Domains Framework (TDF) (Michie et al., 2005). The qualitative phase comprised focus groups and interviews with midwives working in the UK and focused on gaining a deeper understanding of the survey findings as well as exploring in greater detail implementation of the CMO guidelines.

The study was initiated through a stakeholder event, held on the 13 June 2018, which obtained feedback from a variety of experts in the field of alcohol and pregnancy. Appendix A lists the members of the stakeholder group. The group comprised of academics and researchers, third sector organisations (including FASD and birthmother advocacy groups, alcohol and maternal and infant health-related charities), midwives, public health practitioners, the RCM and Public Health England. The experts attending the event provided feedback on aspects of the project, with specific focus on the recruitment strategy, questionnaire and focus group vignettes. Practical issues relating to distributing the survey were discussed, with several representatives expressing support for supporting the distribution through their own networks. The group also commented on the key domains covered by the questionnaire and made suggestions for individual items to be added.

Theoretical framework

There are multiple models of behaviour change used to support best health care practice, such as the Theory of Planned Behaviour (Ajzen, 1991) but such models can be complex and lack comprehensiveness. Their complexity means they can be difficult to understand and operationalise for both researchers and healthcare practitioners. The large number of overlapping theories of behaviour make it difficult to select from the plethora that exist (Michie et al., 2005). The need for an overarching theoretical framework to support behaviour change in healthcare practice led to the development of the Theoretical Domains Framework (TDF) which brings together 33 models of behaviour or behaviour change and includes 128 separate constructs (Michie et al., 2005). The TDF has 11 theoretical domains that outline determinants of behaviour: knowledge, skills, social/professional role and identity, beliefs about capabilities, beliefs about consequences, motivation and goals, memory attention and decision processes, environmental context and resources, social influences, emotion and action planning (previously named behavioural regulation). A further 12th domain considers the nature of the practice behaviour rather than the determinants of the behaviour. The TDF was further validated to 14 domains where optimism, reinforcement and intentions were found significant and added (rather than being imbedded in the original 11) (Cane et al., 2012). The original 2005 version of the framework domains have been empirically mapped to the behaviour change techniques likeliest to influence practice (Michie et al., 2008). The Behaviour Change Wheel (BCW) (Michie et al., 2011) was developed as a "behaviour system", designed support the process of intervention design.

There are many benefits to using a theoretical framework and the TDF in particular. A theoretical approach in assessing barriers may mitigate cognitive biases, as individuals may be unaware of what determines their behaviour and offer answers that are logical but not necessarily accurate (Nisbett and Wilson, 1977); or refer to external rather than personal factors when explaining undesirable behaviours, (Ross, 1977) and may not be aware of some automatic responses to cues such as emotion (Bargh et al., 2001).

The TDF has been used for this purpose across a range of practice behaviours in both primary (Asselin et al., 2015; Cadogan et al., 2018, 2016) and secondary care (Bérubé et al., 2015; Craig et al., 2017; Fuller et al., 2012), across a range of practice behaviours such as hand hygiene (Fuller et al., 2012), prescribing (Johnson et al., 2015), and stroke rehabilitation (Loft et al., 2017). Notably, it has been previously used to address implementation of guidelines or interventions among midwives with sepsis care (Steinmo et al., 2015), discussing place of birth with women (Henshall et al., 2018), physical activity (McParlin et al., 2017), and supporting pregnant women to stop smoking (Beenstock et al., 2012). For all of the reasons cited above the TDF (Michie et al., 2005) was selected for use within this study.

Quantitative phase

Sampling and recruitment

We carried out a cross-sectional survey using an anonymous self-reported online questionnaire among midwives working in England, Scotland, Wales, and Northern Ireland. Midwives were eligible to take part if they were currently practicing in the UK. Participants had the opportunity to enter a prize draw to win one of three £100 shopping vouchers.

Our original intention was to obtain a random sample of midwives for the questionnaire survey. However, discussion with the stakeholder group indicated that an accessible sampling frame such as the RCM or National Midwifery Council (NMC) register, which could be used to select a random sample from, was not possible as using data registers of membership organisations is restricted under the General Data Protection Regulation (GDPR).

A convenience sample was therefore accrued through invitations distributed through the professional networks of the research team and those of the stakeholder groups and subsequent snowball sampling. Recruitment advertisements were distributed via social media (Twitter and Facebook); the survey link was tweeted several times by the research team. Previous research suggests that Twitter may be a useful recruitment strategy for medical research, although may not offer a superior response to traditional recruitment methods (Topolovec-Vranic and Natarajan, 2016). An advertisement was also placed on Gumtree to reach more widely than only social media.

The target sample size was 1,000 midwives. This would generate sufficient data for the multivariable analyses based on a minimum of 300 plus at least 10 events for each variable added to the model (Comrey and Lee, 1992; Morgan and Voorhis, 2005), and has been previously used in questionnaire surveys of this kind (Karanges et al., 2018).

Questionnaire

The survey questions were developed based on review of previous studies that have explored midwives knowledge, attitudes and practices (Watkins et al., 2015; Winstone and Verity, 2015) and the TDF.

To determine midwives' knowledge on alcohol-related issues, questions included knowledge of the CMO alcohol guidelines for pregnancy. To determine practices, questions elicited information about how and when midwives gather information on alcohol consumption, whether they use validated screening instruments and if so which one(s), what advice is routinely given to women about alcohol consumption, whether advice is recorded in a woman's notes and what action is taken if concerned about a woman's drinking. The questions asking about knowledge and practices were segregated to gather information on midwives' alcohol assessment and advice in relation to all women and women for whom an alcohol-related problem is suspected. The knowledge questions came after the practice questions to reduce a potential order effect and used five-point Likert scale response categories (always, usually, occasionally, rarely, never) or free text boxes. To determine the behavioural

determinants of midwives' implementing the CMO guidelines on alcohol consumption to pregnant women, 26 statements aligned to 10 domains of the TDF were developed. In addition, a hypothetical statement was included – "if I were pregnant now I would abstain from consuming alcohol" – as a proxy for midwives' personal attitudes towards alcohol use during pregnancy. Midwives rated their responses from strongly agree to strongly disagree to each TDF statement using a seven-point Likert scale. Some of the questions were phrased negatively to avoid response bias. TDF questions were followed by questions on education and training received in relation to maternal alcohol consumption and demographic and midwifery practice-related questions. Table 1 shows each of the 10 domains used in the analysis, a description of the overall domain and the survey questions included in the survey covered within each domain. The questionnaire is included in Appendix B.

The questionnaire was developed using an iterative process amongst all team members with specific input from Judith Dyson (JD) on coverage of TDF domains across the survey questions. During this process redundant questions were removed. The draft questionnaire was discussed with the stakeholder group and minor modifications were made following this process. Following piloting of the questionnaire with 16 midwives and an RCM representative a few minor revisions were made. Piloting the questionnaire suggested it would take about 15–20 minutes to complete. The questionnaire was created using Qualtrics software (Qualtrics, 2018) and the survey link was live from October 2018 to January 2019.

Data analysis

Questionnaire data were transferred from Qualtrics into an Excel database, checked for fidelity, negatively phrased questions were reversed before analysis using SPSS version 25. Frequencies and percentages were calculated for categorical data. Measures of central tendency and dispersion were estimated for each statement from the TDF on the questionnaire. The scores for each statement within each of the 10 TDF domains were summed and a mean calculated. Additionally, scores for statements in each domain were summed and a mean calculated to create a mean score for each domain. Lower scores indicate agreement with the statement or facilitating midwives' behaviour and higher scores indicate the statement acting as a barrier against carrying out the behaviour. Multivariable logistic regression was used to examine the relationship between each of the TDF domains and 1) at booking advising all women to abstain, and 2) other than at booking advising all women to abstain. Responses 'always' and 'usually' were combined to represent carrying out the advice and 'occasionally', 'rarely' and 'never' were combined to represent a comparison group. The association was reported as an odds ratio (OR) with 95% confidence interval (CI).

Table 1. Description of TDF domains in relation to the study

Domain	Description	Survey questions
Beliefs about capabilities	Whether advising to abstain is easy, within midwives' control and midwives have confidence/self-efficacy to deliver the advice	• I am confident that I could advise women to abstain from alcohol during pregnancy if I wanted to • Whether or not I advise women to abstain during pregnancy is entirely up to me • I am confident that I can inform pregnant women about the CMO's Low Risk Drinking guidelines
Beliefs about consequences	Perceived consequences of advising or failing to advise on abstinence, whether it has impact on behaviour and perceptions. Belief or lack of belief in the guidelines/evidence.	• Advising women to abstain from alcohol during pregnancy is harmful • Advising women to abstain from alcohol during pregnancy is not worthwhile • Advising pregnant women to abstain from alcohol has no impact on their behaviour • I have seen proof that pregnant women follow the advice to abstain from alcohol
Environmental context and resources	Having the resource (e.g. time, staffing level, necessary equipment) to advise women on alcohol consumption in pregnancy	• The decision to advise women to abstain from alcohol during pregnancy is beyond my control • I don't have enough time to advise pregnant women to abstain from alcohol during pregnancy
Emotion	The extent to which emotional factors (e.g. fear, anticipated regret, stress) influence midwives giving advice on alcohol consumption during pregnancy.	• Advising women to abstain from alcohol during pregnancy is not rewarding for me • I regret it if I don't advise women to abstain from alcohol
Motivation, goals and priorities	The extent to which midwives intend to, want to and feel that the advice is worthwhile and to what extent other work tasks interfere with that	• I want to advise women to abstain from alcohol during pregnancy • I do not intend to advise women to abstain from alcohol during pregnancy • There are other things I want to achieve in the appointment(s) with pregnant women that get in the way of asking about their alcohol use
Knowledge	Knowledge of the CMO guidelines and their content	• The CMO's Low Risk Drinking Guidelines are accurate and represent the best evidence available on alcohol and pregnancy
Memory, attention and decision processes	Whether midwives remember to provide the advice and situations where advice is not given and	• I sometimes forget to ask women about their alcohol use

Professional role and identity	Expectations to ask about alcohol, autonomy to decide whether to ask and personal to drinking in pregnancy	• It is expected of me that I advise women to abstain from alcohol • Advising pregnant women to abstain from alcohol is part of my job • I expect to advise women to abstain from alcohol during pregnancy
Skills	If midwives have the skills/level of training required to ask and advise women about alcohol	• The CMO Low Risk Drinking Guidelines help me to build rapport with pregnant women • I have a range of communication techniques for advising pregnant women to abstain, that I can apply based on the needs of the woman • It is hard for me to advise women to abstain from alcohol during pregnancy
Social influences	Perceptions about whether women like/ dislike the midwife's advice and pressure/ support/expectations from colleagues and superiors	• My colleagues think I should advise women to abstain from alcohol during pregnancy • I feel under pressure from my colleagues to advise women to abstain from any alcohol during pregnancy • Women don't like it when I tell them to abstain from alcohol • My senior colleagues consider it important that I advise pregnant women to abstain from alcohol

Qualitative phase

Data collection tools

The qualitative phase began in February 2019, following closure of the online questionnaire. Initial analysis of the questionnaire data was conducted to gain an overview of the results and key aspects that were to be addressed in the qualitative phase. This included basic frequencies for each of the domains and exploration of free text responses to questions on barriers, which were key aspects to investigate further in the qualitative phase. The initial aim was to conduct five focus groups across the UK, but due to difficulties with recruitment midwives were offered to do telephone interviews to fit better with their clinical commitments.

A draft focus group interview guide was developed by the research team, which drew on the TDF and was informed by the initial questionnaire findings. Four vignettes were created by Lisa Schölin (LS) and Julie Watson (JW), which outline hypothetical scenarios of situations that midwives could relate to (Appendix C), as well as covered by the TDF domains. Vignettes are commonly used in qualitative interviewing to ascertain participants' knowledge and interpretations of a specific situation, though they cannot be used to accurately predict behaviour in a similar situation. The benefit of vignettes is their focus on allowing participants to discuss a scenario in a non-confrontational way rather than enquiring about participants' personal experience (Jenkins et al., 2010). Vignettes have been used previously in similar research looking at student perceptions of FASD prevention (Coons et al., 2017).

The interview guide was tested in a pilot interview with four midwives who split their time between midwifery teaching, practice link role, and clinical work. As the discussion was informative for the research questions, and due to the midwives' involvement in clinical practice, the data from the pilot focus group was included in the results. The pilot testing also included a discussion on the questions within the interview guide and was subsequently revised based on the feedback in the pilot focus group. All midwives who attended the pilot group provided written consent.

Recruitment

Midwives with experience of providing antenatal care to pregnant women were recruited through social media and professional networks. The aim was to recruit midwives with a varied length of experience, where possible, as well as a similar number of participants from across the four nations. Advertisements were posted on Twitter and Facebook. Furthermore, the team's professional network was used by contacting colleagues working in antenatal settings either through research or clinical work – no direct recruitment through the NHS was undertaken. Midwives were recruited through professional networks and national RCM branches, apart from one who contacted the research team after seeing an advert on social media. The initial plan was to conduct focus groups throughout the UK, but early on it became evident that a pragmatic approach was needed to accommodate midwives' busy schedules. Apart from the pilot focus group, only one focus group was conducted in Wales, facilitated by RCM Wales. A group discussion was set up with assistance from RCM Northern Ireland, however, as only one midwife signed up to attend, the group was cancelled with the offer of conducting phone interviews instead. Another focus group was set up in the East of England but only one midwife showed up and instead an individual interview was conducted. Similarly, a planned focus group in the North of England was rescheduled as individual interviews due to low numbers of midwives who signed up. All midwives who were interviewed were subsequently asked to distribute the invitation to participate in a research interview to their colleagues.

As an alternative recruitment strategy, a focus group was set up for the Maternity and Midwifery Festival,[4] run by the Maternity and Midwifery Forum. Supported by the organisers, prospective participants signed up to the Festival session before the Festival and were provided with the PIS. Written consent would then have been gathered following a brief presentation of the main questionnaire findings. However, as many people turned up for the session on the day who had not previously signed up and been provided the PI sheet in advance, it was considered unethical to consent them on the spot and run the focus group. All midwives who participated in the session were asked to provide their contact details if they were interested in taking part in a telephone interview instead. In total seven midwives consented to be contacted later and left their details, though none responded to a subsequent email invitation to arrange for an interview. One reminder was sent to all individuals who had expressed interest in attending. To maximise participation, remuneration was offered for each midwife who took part in the form of a monetary donation to a suggested charity.

Data collection

Upon contact with LS or JW, all prospective participants were provided with a Participant Information sheet and for those who were interviewed over telephone a consent form was sent in advance with the request to preferably complete and return digitally by the interview date. A few participants did not return the consent form ahead of the interview, however consent was confirmed verbally, and the singed consent form was provided after the interview had been completed. All focus groups/ interviews followed the same structure, with a flexible approach to the vignettes; some only included a few of the vignettes depending on the topics discussed in the interview.

4 http://www.maternityandmidwifery.co.uk/events/ [Accessed 12 June 2019]

All but one interview (originally set up as a focus group) were conducted over telephone, whereas the two focus groups were conducted in person. In total, 22 midwives participated of a total of 37 who expressed interest. The interviews and focus groups lasted between 35 and 75 minutes (mean time 53 minutes).

Data analysis

All but one interview were audio recorded and transcribed verbatim. One participant did not consent to being audio recorded and detailed notes were instead taking to capture the key points raised in the discussion. All data were imported to Nvivo 12 (QSR International Pty Ltd Version 12, 2018) for analysis and initial coding of one transcript was undertaken by LS and JW. Following the initial coding, a draft coding framework was developed through discussion over Skype which was applied to another two transcripts each (not the same transcripts). Following the coding of these four transcripts, another discussion was held over Skype to revise and add any new codes and a final coding framework was agreed. This was applied to the remaining transcripts, which were divided between the two researchers. LS and JW then analysed all coded data using Braun and Clarke's (2006) framework for thematic analysis. Once all data were analysed, LS and JW divided the developed themes for write up. A draft of the findings was revised by both researchers to identify any queries or nuances in the data that needed to be clarified further. From the analysis, six key high-level themes were developed; views of the CMO guidelines, communication with women, strategies in addressing alcohol use, skills and knowledge, systems and processes, and the role of alcohol in people's lives. Findings related to these themes were later synthesised with the quantitative data, to answer each of the four research questions.

Ethics

Ethical approval was obtained from the Section of Nursing Studies Ethics Research Panel, School of Health in Social Science, University of Edinburgh (ref: STAFF124). While survey data were anonymised, participants had the option to opt-in to re-test the survey within two weeks of completing the survey and if so to provide an email address. The re-test was not part of the current study, but a re-test will allow for analysing reliability of the data collection tool and will inform future work. Email addresses collected for the re-test survey were kept in a password-protected excel spreadsheet which was deleted once the survey had been closed and until the re-test had passed. A similar procedure was followed for the prize draw. For both surveys, participants were informed about the purpose of the study, that it was voluntary and that they could withdraw their participation at any time. The participant information sheet was displayed on the first page of the online survey and participants were asked to confirm that they consented to taking part before they could progress to the survey questions. A completed survey was considered consent to partake. All survey data were downloaded from Qualtrics and stored on a secure network at University of Edinburgh. For team members to be able to access anonymised data, a secure University of Edinburgh data sharing platform (DataSync) was used.

For the qualitative phase, participants were presented with a PI sheet before deciding to take part. Written and verbal consent was obtained from all participants, including consent to audio record. Consent forms were either collected in person or sent via email by the participants (for phone interviews). All but one participant agreed to being audio recorded. All participants were informed that their data would be treated confidentially and that no names would appear in the presentation of the data. Furthermore, they were informed that they could withdraw from the study at any time. Interviews and focus groups were transcribed either by a verified transcription company or by LS. All transcripts were checked and anonymised. Once interview and focus groups had been transcribed, all audio files were deleted. Background information collected in a short questionnaire and transferred into an excel spreadsheet after which the questionnaire was destroyed. All aspects of the project were aligned with the GDPR[5] and the Data Protection Act 2018.[6]

5 https://ico.org.uk/for-organisations/guide-to-the-general-data-protection-regulation-gdpr/ (Accessed 20 April, 2018)
6 https://www.gov.uk/data-protection (Accessed 20 April, 2018)

Results

This section presents the results from the two phases of the study. First, a summary of the participant characteristics for the survey and the focus groups/interviews is presented. The following sections present the key findings under four main topics; awareness and knowledge of the CMO guidelines, implementation of the guidelines in practice, factors influencing midwives to provide abstinence-based advice, and opportunities for supporting midwifery practice.

Participants

Quantitative phase

The total number of respondents achieved for the quantitative phase was 842 practicing midwives, the majority of whom were practicing in England (85%). Table 1 provides an overview of the participants in the survey. The distribution of midwives in the survey from each nation was representative of the distribution amongst the population of registered midwives. Of the total of 25,760 registered midwives in 2016, 82% worked in England, 9% in Scotland, 5% in Wales and 4% in Northern Ireland (RCM, 2016).[7] Within the sample, 47% were aged 45 years or older, in line with the overall population of midwives where 32.5% were aged 50 years or older in 2016 (RCM, 2016). Just under two thirds of the sample had carried out a booking within the last week or month (59%), whereas 15% had done so in the last year and 26% more than a year ago.

Figure 3 shows the geographical location of the participating midwives' practice or clinic, indicating a relatively even spread throughout the country for the 818 midwives who provided their practice postcode.

Qualitative phase

A total of 22 midwives took part in the qualitative phase, either through focus groups (n=11) or interviews (n=11). Table 3 shows an overview of the characteristics of participating midwives. All midwives were female, had gained their qualification within the UK, were white and their experience as midwives ranged from one to 40 years (mean=20.5 years). Their roles varied, including two substance misuse specialist midwives, two lead midwives for public health, and one complexities specialist midwife. Within the sample, 32% had carried out a booking in the last week or month, 23% in the last year, and the remaining two fifths more than a year ago.

7 Data from the 2016 report is used here, rather than the 2018 report, as the latest report reports age distribution for midwives and student midwives together

Table 2. Survey sample characteristics (N=842)

Characteristic		n	%
Place of work (n=842)	England	714	85
	Scotland	43	5
	Wales	30	4
	Northern Ireland	55	6
Age (n=836)	21–24	46	6
	25–34	184	22
	35–44	214	26
	45–54	251	30
	>55	141	17
Place of work (n=835)	Community or integrated team	360	43
	Hospital-based[1]	249	30
	Rotational[2]	226	27
Place qualified (n=797)	UK	790	99
	EU	6	<1
	Outside of EU	1	<1
Years in practice (n=825)	<2 years	111	14
	3–10 years	284	34
	>10 years	430	52
Last carried out booking (n=836)	Within last week	382	46
	Within last month	111	13
	Within last year	124	15
	More than a year ago	219	26

1 Hospital-based included labour ward, day assessment unit, fetal medicine unit, post-natal ward, co-located midwife unit.

2 Rotational included midwives working in community and hospital settings and midwives with a specialist role unless community setting specified.

Figure 3. Geographical location of midwives' practice or clinic.

Table 3. Overview of the characteristics of participating midwives

Data source	Geographic location	Role	Last booking	Duration of experience (years)
Focus group	Wales	Clinical supervisor	<1 year	20–30
		Research and development	<1 year	10–20
		Research	>1 year	20–30
		Clinical research	>1 year	20–30
		Lead midwife public health	<1 week	30–40
		Hospital labour ward	>1 year	<10
		Hospital antenatal clinic and standalone midwifery-led unit in community	<1 week	20–30
Focus group	England	Rotational post and academic link	<1 month	20–30
		Rotational post and academic link	<1 month	20–30
		Academic link/lecturer	>1 year	40–50
		University lecturer	>1 year	10–20
Interview	N. Ireland	Lead public health community	>1 year	30–40
Interview	N. Ireland	Hospital antenatal or postnatal ward	>1 year	<10
Interview	N. Ireland	Antenatal and community	<1 month	10–20
Interview	England	Specialist midwife (complexities)	<1 week	20–30
Interview	England	Community	<1 month	20–30
Interview	England	Specialist substance misuse midwife	<1 week	10–20
Interview	Scotland	Lead midwife	<1 year	10–20
Interview	Scotland	Manager	<1 month	30–40
Interview	Scotland	Hospital labour ward	<1 year	<10
Interview	Scotland	Substance misuse midwife and community lead	>1 year	20–30
Interview	Scotland	Triage unit	<1 year	<10

Awareness and knowledge of the CMO guidelines

The first key objective of this study was to determine to what extent midwives in the UK are aware of the CMO guidelines. Within the survey, just under two thirds of midwives reported being aware of the CMO guidelines (58%). When asked about the content of the guidelines, almost all midwives who were aware of the guidelines stated that they recommended that women should avoid alcohol completely, however about one fifth stated content in line with previous guidelines (table 4).

Table 4. Knowledge and awareness of the CMO guidelines in the survey sample

		n	%
Aware of CMO guidelines (n=832)	Yes	484	58
	No	384	42
Content of guidelines[1] (n=484)	Avoid alcohol completely	438	91
	Small amounts of alcohol during early pregnancy are unlikely to cause harm	173	36
	Limit to 1–2 units 1–2 times per week after first trimester	93	19
	Do not get intoxicated	81	17
	Do not binge drink	112	23
	I don't know	1	<1

1 Among those who reported being aware of the guidelines

When looking at awareness of the CMO guidelines by country, there was little difference between the nations in relation to awareness of the guidelines, though the proportion reporting being aware was slightly lower in England and Wales (table 5). However, these figures should be interpreted with caution due to the small number of participating midwives within the smaller nations and that the respondents represented a convenience sample rather than a random sample.

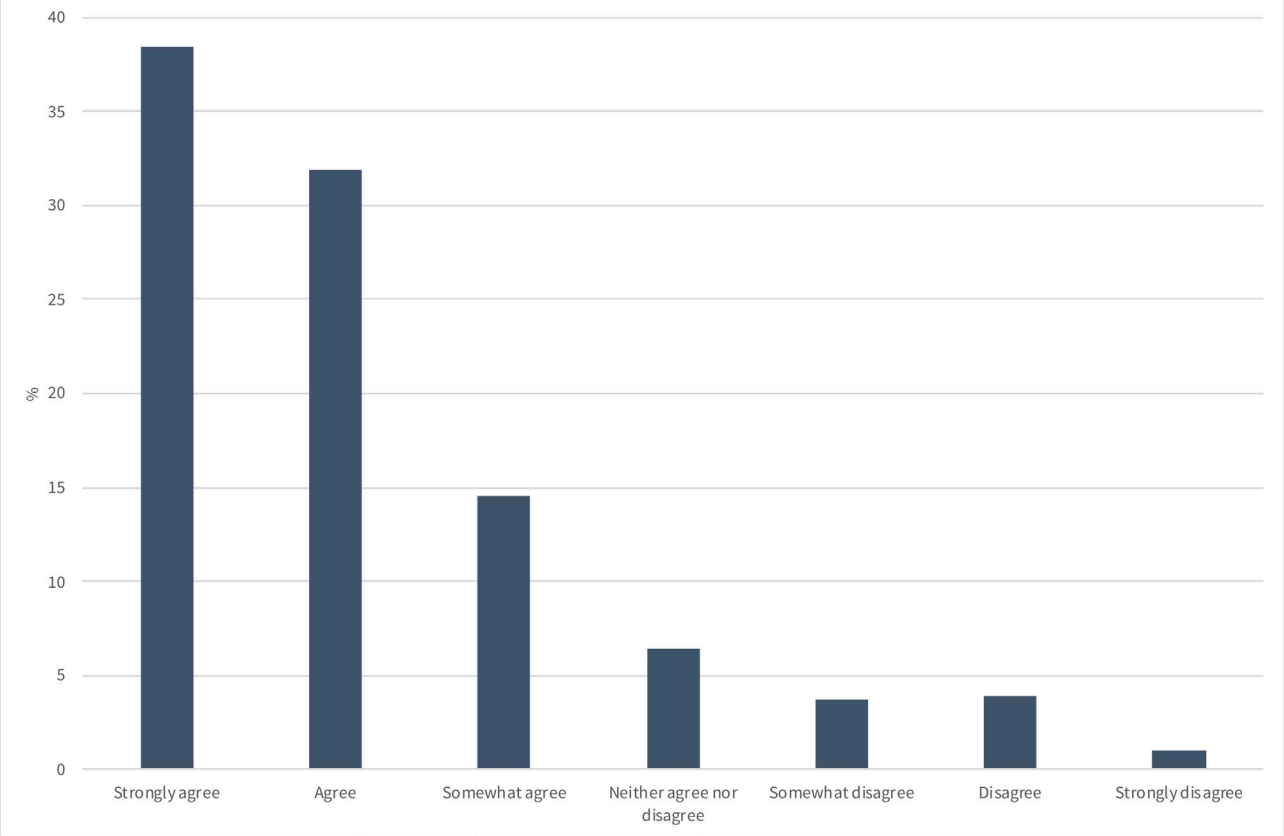
Table 5. Awareness of CMO guidelines and content of guidelines, by country

		Country n (%)			
		England	Wales	Scotland	N.Ireland
Aware of CMO guidelines (n=832)	Yes	402 (57)	17 (59)	30 (70)	35 (69)
	No	307 (43)	12 (41)	13 (30)	16 (31)
Content of guidelines[1] (n=484)	Avoid alcohol completely	361 (90)	16 (94)	28 (93)	33 (94)
	Small amounts of alcohol during early pregnancy are unlikely to cause harm	151 (38)	5 (29)	6 (20)	11 (31)
	Limit to 1–2 units 1–2 times per week after first trimester	84 (21)	1 (6)	3 (10)	5 (14)
	Do not get intoxicated	71 (20)	2 (12)	3 (10)	5 (14)
	Do not binge drink	101 (25)	3 (18)	3 (10)	5 (14)
	I don't know	1 (0.2)	-	-	-

1 Among those who reported being aware of the guidelines

Among midwives who were aware of the guidelines, there was agreement that the guidelines are accurate and represent the best evidence. Figure 4 shows the distribution of responses, indicating that just under 40% strongly agreed that the guidelines were accurate and based on the best evidence, with a further 32% agreeing and 15% somewhat agreeing and another 15% either feeling ambivalent or disagreeing to some extent with the statement.

Figure 4. Beliefs that the guidelines are accurate and represent the best evidence (n=483).



The qualitative findings supported the survey results with the overall view expressed by midwives that 58% being aware of the guidelines was low. There was general consensus that more midwives should be aware of these guidelines, especially considering that they were implemented over three years ago. One reason discussed, that may explain why midwives may not be aware of the guidelines, was that they simply might not know the name of them or that they are issued by the CMOs; "I think that people will know what they are, but possibly not that they are the CMO advice" (Scotland, Interview 3). Overall, midwives believed that the workforce would know the content of the guidelines despite not knowing their name. The survey findings, however, showed that some midwives defined the content of the guidelines in line with previous versions of national guidance. Many participants noted that the 19% of survey respondents who stated the guidelines include a recommendation of a 1–2-unit limit may have referred to the NICE guidelines. Until December 2018 these guidelines still contained the old recommendation (see box 1, page 9). Midwives acknowledged that as the guidelines have changed over time, professional bodies have held different positions, which added further context to the seemingly diverse responses to the content of the guidelines.

> *The Royal College of Obstetricians and Gynaecologists they say that the advice is no alcohol but NICE guidelines say that there is no evidence that two units per week is harmful to the baby. So our guidelines are in conflict with each other (England, interview 3)*

A few midwives felt that the changes over time may lead to confusion for women; "one minute they were saying, obviously, no alcohol, no risk, and then the next they were kind of saying, actually a small amount now and then probably is okay" (Wales, focus group). It was therefore seen as important for women to be given a consistent message, and that communication of advice about alcohol during pregnancy needs to be the same across the UK. A few midwives had experience of women who referred to the previous guidelines which allowed for some alcohol and therefore questioned the updated guidelines.

All midwives, however, agreed that abstinence is the correct advice, with the argument that uncertainty of evidence of harm at low levels support a precautionary approach. Only one midwife, in the English focus group, spoke in depth about the uncertainty of the evidence underpinning the guidelines from the point of view that there isn't good evidence for supporting the abstinence advice. Previous guidelines were perceived as ambiguous, compared to the CMO guidelines which were viewed as having a clearer message.

> *I welcomed the guidelines because I felt before that they were very ambiguous. There needed more clarity (Northern Ireland, interview 3)*

Four midwives specifically mentioned dissemination of the guidelines, with two expressing that communication of the change might not have been advertised widely and the other two suggesting there was some communication but that it may not have reached all midwives.

> *These are generally circulated through most organisations, I would suspect and certainly in our organisation any updates come through email and they are fairly well-publicised but we get a lot of emails (Scotland, interview 3)*

> *It's disseminated, so like the Department of Health […] but they're skimmed over, because it's assumed everyone knows it (Northern Ireland, interview 2)*

There was a sense that a universal abstinence message should be communicated, albeit with the potential need for personalising it to the individual woman. Drinking before knowing about the pregnancy was commonly mentioned as a situation where adaptation of the recommendation was needed to alleviate anxiety; "almost trying to give them permission to let go of that guilt […] but to, like, work forward now, that she knows she's pregnant and make those changes now" (Wales, focus group).

Keeping a universal message was complicated by conflicting views from other health professionals, something that was raised throughout several focus groups and interviews. Midwives noted that different advice from, for example, a doctor might negate the message that is communicated through midwives.

> *Medics (saying), oh, one drink will be okay. So, they clearly aren't getting the same messages and that's where this conflicting kind of message then comes... and grey area comes. Because it's always been a society that will listen to the doctor (Wales, focus group)*

Finally, a key issue discussed by several participants in relation to the guidelines was that not all midwives are up-to-date with the latest information or guidance on various topics. There were two reasons given for this; lack of self-initiated information-seeking of training and experience of the midwife.

> *You kind of get the ones who become almost complacent and they think that they don't need to be as up to date with their vision as they used to have to be […] as opposed to going out and searching for information that's new (Northern Ireland, interview 2)*

The other reason for midwives not being up-to-date was related to age, where a few participants noted that training on alcohol may not have been comprehensive or given much attention during the training of, as they noted, "older" midwives. One participant specifically related this to the increasing awareness around alcohol as a significant public health issue, particularly during pregnancy; "some of the older midwives understand that as much because, when they qualified I don't think that the guidelines or the advice was so strict as 0 alcohol" (Scotland, interview 1).

Implementation of guidelines in practice

Discussing alcohol at antenatal appointments

In addition to understanding the knowledge and awareness of the guidelines, the second objective of the study was to explore implementation. The survey results showed that most midwives always (90%) or usually (7%) advise all women to abstain from alcohol during pregnancy at booking (table 6), whereas at other antenatal appointments this drops to around a third (26% and 12%, respectively). HED, specifically, was always or usually assessed by two thirds of midwives for all women at booking. Interestingly, around three quarters of midwives always or usually enquired about alcohol consumption between conception and pregnancy recognition. The effects of drinking on the woman and her baby were always discussed with all women at booking by fewer than half of midwives (44%), which reduced further at appointments other than booking with only 20% discussing this. This was higher if midwives suspected alcohol was a problem for women, but still only 54% midwives reported discussing alcohol-related effects with women.

Table 6. Practices of assessment and advice provision for all women (%)

		n	Always	Usually	Occasionally	Rarely	Never
At booking	Pre-pregnancy drinking	757	86	8	2	2	2
	Alcohol before recognition	753	62	14	8	8	8
	Current frequency	753	88	7	2	2	2
	Current quantity	753	94	4	1	<1	<1
	Current frequency of HED	755	56	12	13	10	9
	Advise to abstain	756	90	7	1	<1	1
	Discuss effects of alcohol on mother and baby	741	44	21	24	9	2
Other than booking	Advise to abstain	812	26	12	26	24	11
	Discuss effects of alcohol on mother and baby	789	20	11	31	25	14

Midwives were also asked about their usual practice regarding assessment and advice on alcohol consumption for women who they suspect have an alcohol problem. Around a third to three quarters of midwives further explore a woman's drinking behaviour regarding referral or family history for an alcohol-related problem, alcohol consumption during previous pregnancies, her partners' drinking and the context within that drinking takes place. Advice to reduce drinking or to abstain is given by 89% of midwives, and onward referral to an appropriate agency is always made by 93% of midwives (table 7).

Table 7. Practices of assessment and advice for women with suspected alcohol problems (%)

		n	Always	Usually	Occasionally	Rarely	Never
At booking	Any referral for alcohol-related problem	755	75	14	5	4	2
	Family history of alcohol-related problem	753	34	17	19	16	13
	Alcohol consumption in previous pregnancies	751	53	21	10	9	8
	Context drinking takes place	752	44	23	14	10	10
	Partner drinking	753	44	24	16	9	7
	Advice or support to abstain or cut down	760	89	9	<1	<1	<1
	Onward referral	762	93	6	<1	<1	<1
Other than at booking	Assess for current alcohol use	818	63	20	8	6	3
	Advise to abstain	813	67	15	8	5	4
	Discuss effects of alcohol on mother and baby	807	54	22	11	8	5

Similarly to awareness and knowledge of the guidelines, always or usually providing abstinence advice was consistent across the four nations, whereas a smaller proportion of midwives in Scotland reported providing advice at appointments other than booking, compared to the other three nations (table 8).

Table 8. Proportion always or usually providing abstinence advice at booking and other appointments, by country

	Country n (%)			
	England	Wales	Scotland	N.Ireland
Advice at booking (n=756)	623 (96)	26 (100)	40 (100)	43 (100)
Advice other than at booking (n=812)	254 (40)	16 (53)	12 (28)	32 (64)

In the qualitative component of the study, most of the participants felt strongly that it was part of the midwifery role to have a conversation in the antenatal period, yet they argued many midwives do not have an in-depth conversation about alcohol. Challenges specifically regarding the booking appointments relating to time were commonly mentioned; "that time frame is so rushed anyway that it's quite a challenge to ask and do everything you're meant to do within that 20-minute period" (England, interview 2). As their approach was focused on individualised care, midwives spoke about needing to tailor the appointment to the woman in front of them. If alcohol was not perceived as an issue, but other concerns were evident, they would have to prioritise the issues that were most pressing. The relatively short appointments were not necessarily sufficient in order to adopt an engaging and open conversation around alcohol.

> *It's… a big 'un is time constraints, how much time you can actually spend on a specific topic (Northern Ireland, interview 3)*

Regarding midwives' discussions on post-partum alcohol consumption, table 9 shows that a higher proportion of midwives always discussed alcohol and co-sleeping (77%), compared with alcohol and breastfeeding (40%), and alcohol and parenting (37%).

Table 9. Discussing post-pregnancy alcohol use at any time during pregnancy (%)

	n	Always	Usually	Occasionally	Rarely	Never
When breast feeding	836	40	27	18	9	5
Risks with co-sleeping	830	77	14	5	2	2
In relation to parenting	831	37	21	18	14	10

The qualitative findings indicated that many midwives felt that booking appointments cover a wide range of topics, but that with a continuity of carer model there is an opportunity to address topics later on. This was also a good strategy for relationship-building and seen as potentially encourage disclosure of alcohol use; "building a rapport with women, they're much more likely over a number of visits to disclose how much they are drinking" (Wales, focus group). This was also discussed by one midwife in relation to vignette 1 (Anna, see Appendix E), as she noted that leaving the discussion about alcohol may need to be postponed to a later time to adapt to Anna's behaviour.

> *If she just seemed overwhelmingly in a hurry because she is anxious and things I would just say 'it would be good if we can make some time to chat about this next time' and maybe we can go through a few things (England, interview 2)*

Several midwives discussed in the interviews and focus groups that only if a woman has disclosed consumption, are they likely to address it again. This supported the quantitative findings that a higher proportion of midwives discussed alcohol with women if there was an indication that alcohol consumption may be a problem for the woman. There was an overall view that the question should be asked again at a later time, but for various reasons this may not always happen. In some of the local trusts/health boards there was a more standardised or systematic approach within the maternity records to re-address the question at later appointments. One midwife specifically noted that updated training is focusing on following up the question on alcohol.

> *What we have said is to readdress the question again at 16 weeks, ask it again at 24 weeks. Don't just 'it's been asked, it's a tick box exercise, they don't drink, fine I don't have to go back to that', but rather this is what the new training is going to involve that we are getting all the midwives to ask the question again later on in pregnancy, when the relationship has been built (Scotland, interview 4)*

The use of screening tools to identify women who drink

The ten-item Alcohol Use Disorders Identification Test (AUDIT) and brief version involving the consumption questions only (AUDIT-C) were the validated alcohol screening tools most frequently used by the midwives in the survey, although it is worth noting that 71% used no specific screening tool. Table 10 shows the validated alcohol screening tools reported by midwives in the survey.

Table 10. Use of validated screening tools (n=802)

	n	%
No specific tool	601	70
AUDIT-C	76	8
Other[1]	56	7
AUDIT	22	6
TWEAK	11	2
MAST	8	1
T-ACE	3	1
FAST	3	0.4
CAGE	70	0.4

Some midwives reported use of more than one tool so percentages do not add up to 100%.
[1] Other includes: trust or region-specific tool; adapted or modified version of an un-specified tool; questions in perinatal booking form or electronic record.

The qualitative findings further supported relatively low numbers reporting using formal screening tools. The use of screening questions differed across the trusts and health boards where midwives worked, with a few describing having a pre-booking form which is completed ahead of the initial appointment, rather than face-to-face with the midwife. In agreement with the quantitative findings, all midwives noted asking women questions which are standardised either in handheld records or on computerised systems, with only a few that specifically mentioned a validated screening tool – all referring to the AUDIT-C tool. Establishing a more formalised screening was seen as having a positive impact on eliciting information and reporting consumption.

> *We are only currently implementing a new tool for assessing alcohol use during pregnancy so it's always been a bit subjective in the past […] I think it will help midwives to report alcohol use more accurately because the AUDIT-C has clearly the units on the tool (England, interview 3)*

However, one midwife working in a Northern Irish trust, where questionnaires were filled out ahead of meeting the midwife, noted that some forms were incomplete. In several trusts/health boards alcohol and drug records were audited, to gather information on to what extent the question about alcohol was asked and recorded. Some were using audits to further improve on practice at the local level. Several midwives spoke about using pre-pregnancy questions when screening for alcohol use, as a way of establishing any consumption that may have occurred before the woman knew she was pregnant. Similarly, a few noted that they also ask about the alcohol consumption of the partner, yet this was not universally reported across all interviews and focus groups.

While formal screening tools or set questions were used to identify women who drink, several midwives discussed using some form of clinical intuition or looking out for 'red flags' that would give them concern about a woman's alcohol consumption. In that sense, midwives often approached it as a safeguarding issue. The Anna vignette was an example where midwives noted that failure to engage with antenatal care would be a red flag that would encourage them to investigate further. This also included women who report drinking before knowing they were pregnant.

> *(If) somebody said they were either really worried because they'd had a drink before they knew they were pregnant, then it's much more on your radar (Wales, focus group).*

As the way in which midwives engage with pregnant women was of specific interest for this study, interviews and focus groups explored the use of brief interventions and MI. A few midwives noted that they had undertaken brief intervention training, which was particularly addressed by the midwives working in Scotland where brief intervention training has been universally rolled out since 2009 (Scottish Government, 2009). Whilst midwives did not speak in detail of how they engaged with the principles of brief interventions or MI, most midwives mentioned aspects of brief interventions when discussing the vignettes (eg informing about risks, empathic interviewing, and providing options to change behaviour).

> *I would explain the risks to her (vignette 2 - Emily) unborn baby and explain that there is no safe limit so to not have any alcohol is the best thing to do. And I would suggest to her that when she goes out with her work colleagues that she can suggests things like she drives […] I would really just try and support her in that her, that she's feeling that she's making the right decision for her baby because it really sounds like she really doesn't want to drink but that she feels that she's being pressured and just say that she's doing really well just in relation to how much she was drinking before and the fact that she has actually stopped. I would like signpost her to the NHS websites and things (England, interview 2)*

Whilst discussions included specific ways of eliciting information about alcohol and discussing this with women was mentioned, there were surrounding circumstances midwives noted were important to acknowledge. This related to exploring the wider social environment a woman lives in, to gain a deeper understanding of her relationship with alcohol and what environmental or social factors may support or hinder her to abstain. This was discussed by several midwives in relation to the vignettes, for example Anna.

> *I would like to know what kind of support that she (vignette 1 – Anna) has at home and I would want to explore other things like how things are at home and things like domestic violence as well. I would want to know if it was her first pregnancy as well and whether there were any safeguarding issues with her previous pregnancies and whether there is indication that any of her previous children have been diagnosed with FASD (England, interview 3)*

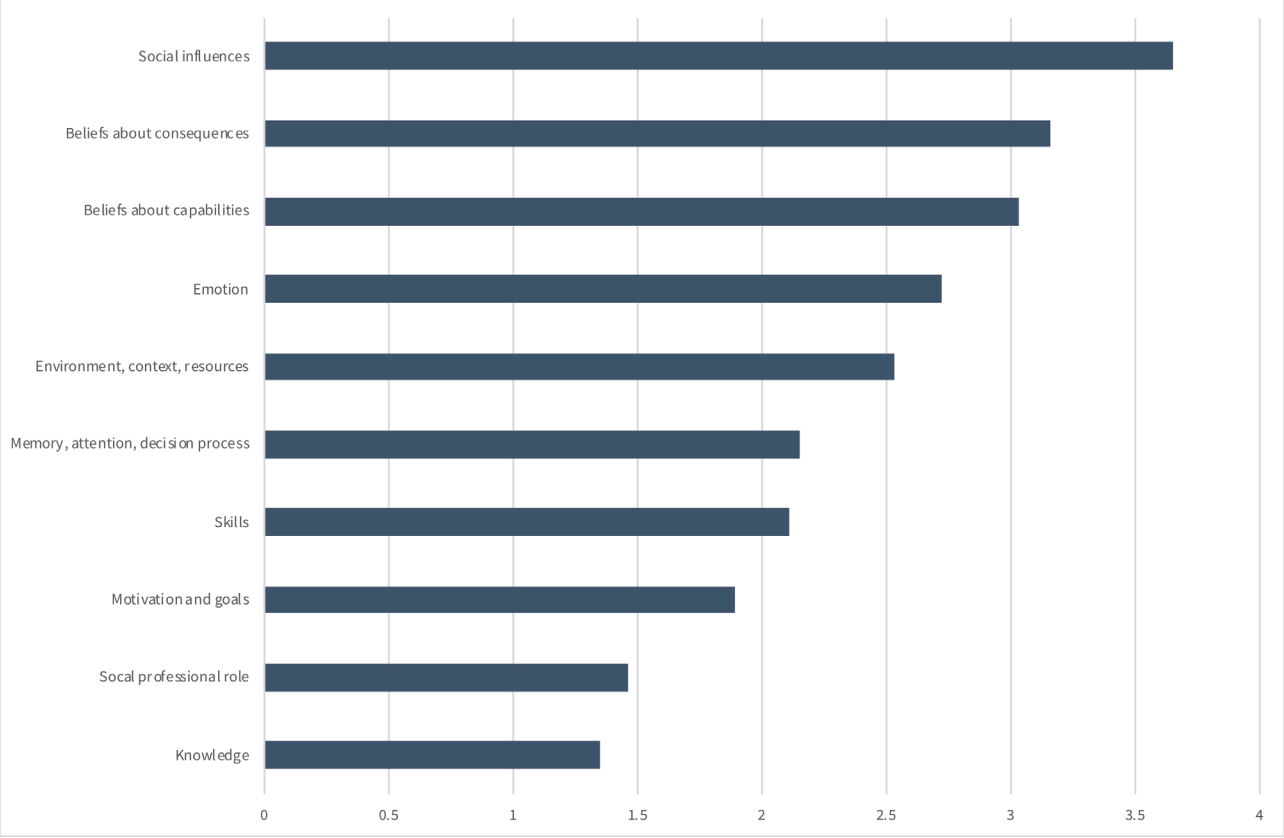
Factors influencing midwives' behaviour regarding advising women to abstain from alcohol during pregnancy

To determine which factors influenced midwives to advise abstinence from alcohol during pregnancy, mean scores were calculated for each of the TDF domains, which are shown in figure 4. The mean domain scores were highest for social influences, beliefs about consequences and beliefs about capabilities, indicating that these domains included more constructs that acted as barriers to implementation of CMO guidelines compared with other domains. The results for providing advice at booking are not reported here due the high prevalence of midwives always or usually advising women to abstain at booking in relation to the number of potential explanatory variables thwarting reliable interpretation of the multivariable analysis due to insufficient power.

The individual items with higher scores, indicative of barriers to implementation, and the domains of the TDF within which they fall were: lack of faith in the guidelines (beliefs about consequences) and feeling that they did not support building a rapport with women regarding alcohol (social influences); that women do not like being advised about abstinence (social influences); and that the advice has little impact (beliefs about consequences). Midwives also lacked self-efficacy for discussing alcohol (beliefs about capabilities), prioritised other tasks (goals) and do not find it rewarding (emotion).

Constructs and domains with lower scores, which reflect greater agreement with the TDF statements, are thus enablers of advising women. These were that midwives wanted to and intended to advise women about alcohol (goals), they see it as part of their job and agree that it is expected of them (professional role and identity).

Figure 5. Mean scores for each TDF domain (range 1–7).



The multivariable regression analysis showed that 'beliefs about capabilities', 'role' and 'emotion' domains of the TDF were the behavioural determinants that were significant predictors of midwives always or usually advising abstinence at antenatal appointments other than at booking (table 11). The likelihood of midwives advising women to abstain were significantly reduced, OR 0.69 (95% CI: 0.51, 0.95), if they did not agree that providing advice was expected of them and saw it as part of their job (social and professional role domain).

Lacking self-efficacy to inform women about alcohol consumption (beliefs about capabilities domain), and emotional factors such as the extent to which midwives found it rewarding or would regret advising women (emotions domain) also significantly reduced the likelihood of advising women to abstain, OR 0.71 (95% CI: 0.57, 0.88), and 0.78 (95% CI: 0.67, 0.90), respectively.

Table 11. Association of behavioural determinants of always or usually advising abstinence at appointments other than booking

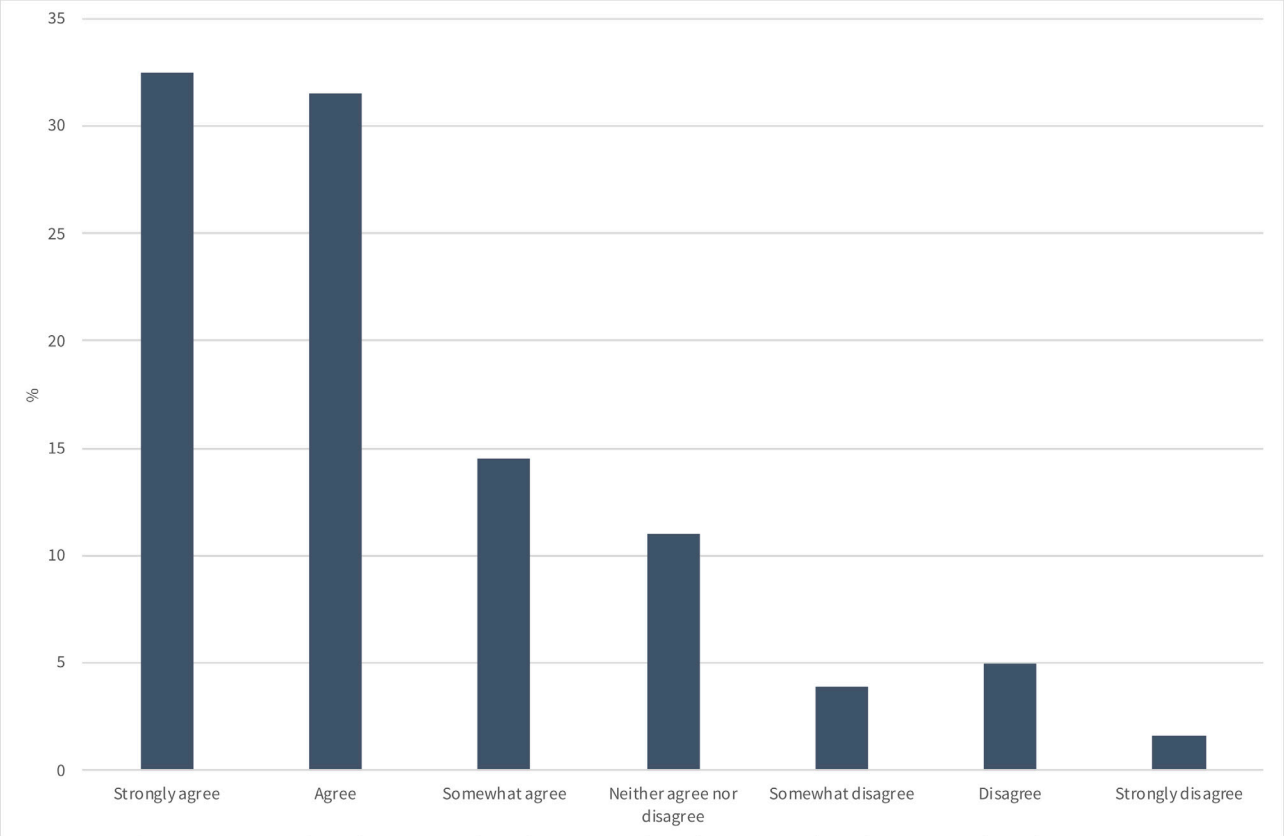
Domain	OR	95% CI	p-value
Social and professional role	0.69	0.51, 0.95	0.022
Motivation and goals	0.90	0.68, 1.18	0.441
Memory, attention, decision process	0.98	0.85, 1.12	0.724
Environment, context, resources	0.96	0.83, 1.10	0.55
Beliefs about consequences	1.14	0.97, 1.35	0.121
Knowledge	1.06	0.84, 1.33	0.642
Beliefs about capabilities	0.71	0.57, 0.88	0.002
Skills	1.23	0.95, 1.60	0.113
Social influences	1.14	0.94, 1.39	0.188
Emotion	0.78	0.67, 0.90	0.001

Some midwives did not answer all questions, so regression analysis involves n=763 (91%); OR=odds ratio adjusted for all other predictor variables in the model; CI=confidence interval

Skills and knowledge

A specific question within the knowledge domain of TDF was whether midwives perceived that they had a good range of communication techniques to discuss alcohol with women. Figure 6 shows that 79% agreed to some extent that they have communication techniques to address alcohol, however, around 10% disagreed with the statement.

Figure 6. Level of agreement for having communication techniques (n=836)[8]



From the qualitative findings it was clear that for midwives, communication with women primarily focuses on initiating and establishing a trusting relationship. Whilst a trusting relationship was key to discussing alcohol, it was evident also for other issues such as domestic violence; "*I think it makes it easier, I mean if we don't have that [relationship with the woman] and it's just an appointment and you still have to cover the issues but just in a slightly different way" (Scotland, interview 3).* This midwife noted that until a relationship had been built, addressing issues like domestic violence might have to focus on giving some basic information until there is an opportunity to explore the topic in detail.

Enabling women to make informed decisions was a key part of the midwifery role, where providing information and advice was the foundation of supporting women to make their own decisions. Importantly, informed decision-making was seen as needing to be underpinned by evidence and current guidelines "obviously it is always a kind of woman's choice but I would want to make sure that she got all the information that is available" (Scotland, interview 5). Specifically related to alcohol, midwives described communication as an 'open conversation' whereby information about risks was provided, whilst being open about what is known and not known in relation to the magnitude of the risk.

> *Just being really honest with the information, being honest about what evidence is out there and making sure we say the official guidelines and offering support (England, Interview 2)*

> *'The evidence tells us to abstain' and that we don't have a lot of evidence around safety and drinking and pregnancy so to keep the risk to a minimum with there not being a safe limit in the evidence so we would strongly advise to abstain (Scotland, Interview 5)*

8 The statement was 'I have a range of communication techniques for advising pregnant women to abstain, that I can apply based on the needs of the woman'

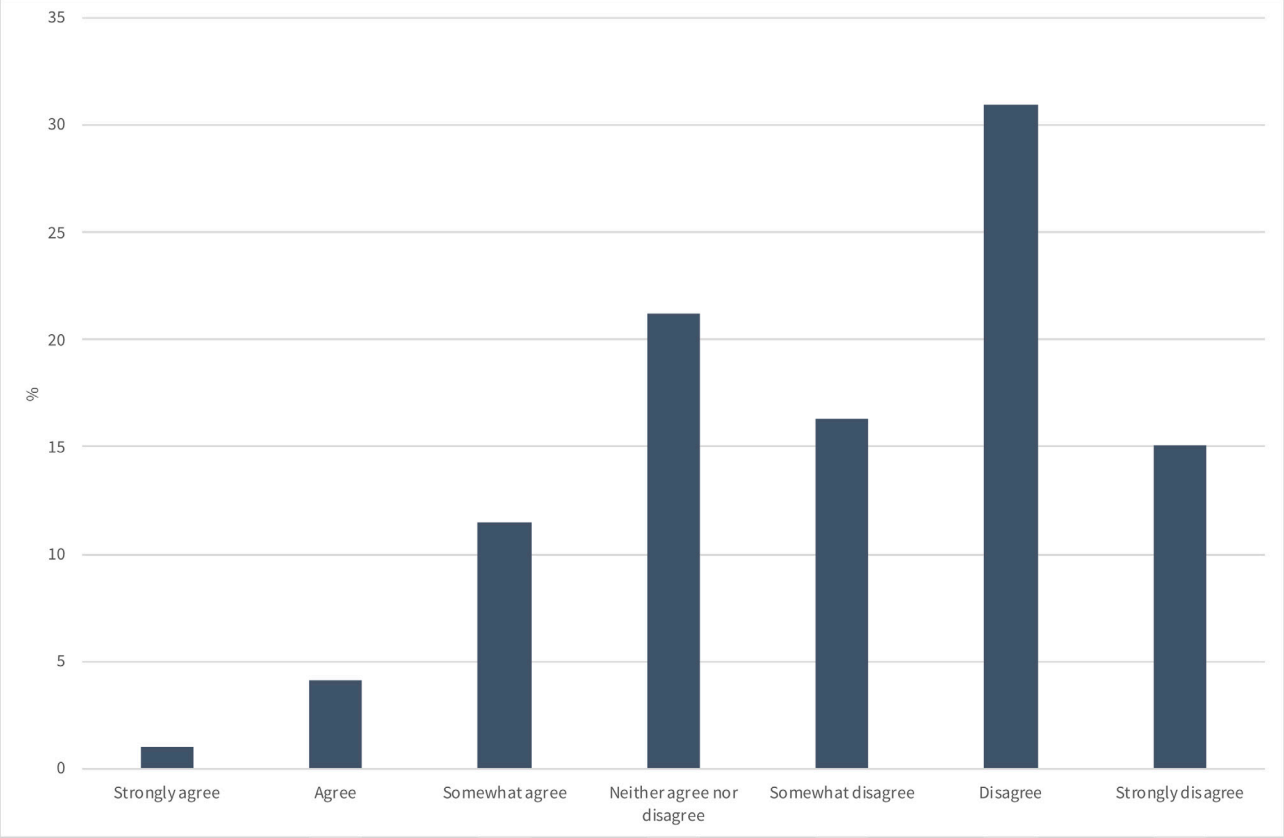
Another aspect of the conversation around alcohol, which related back to building a trusting relationship, was to provide a rationale for why the question is asked. Justifying asking a woman, as part of routine enquiries for all women coming into antenatal care, was perceived as a non-confrontational way of eliciting information about current alcohol use. Midwives kept coming back to the point that it is all about building a relationship with the woman, whereby they felt that midwives must navigate the conversation by being open and provide clear information but also acknowledge that low disclosure rates may be related to fear from women that there may be repercussions if they say they are drinking.

> *I think midwives don't want to damage that relationship if they have built that up with that woman and she won't disclose to them ehm but I think that you've got to be honest with them about it really (England, interview 1)*

> *So women disclosing overall, non-disclosure, is the biggest (problem) because I think they're just so frightened. I don't know why but, you know, I don't think they want to have a bleak picture painted on them, even if they are drinking on a minimal scale (Northern Ireland, interview 3)*

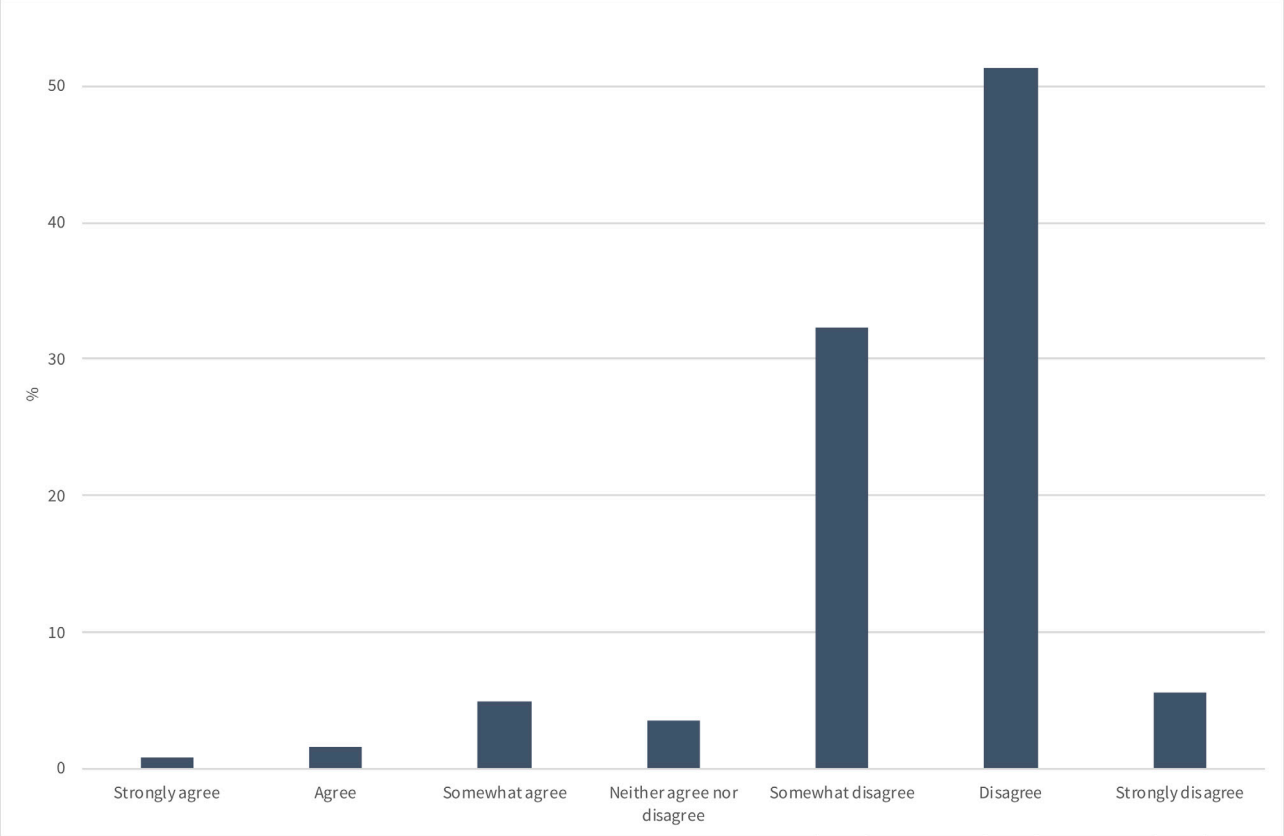
These views added further explanation to the survey data, which showed there was not a particularly strong perception that women dislike it when they are advised to abstain (TDF domain: social influences); just under half of midwives disagreed or strongly disagreed and around one fifth were ambivalent (responded neither agree nor disagree) (figure 7). Some ambivalence in the responses may indicate that there is some concern for women's reaction to being advised or asked about alcohol and how that affects the midwife-woman relationship.

Figure 7. Women dislike being given advice (n=835)



In contrast to perceptions about women's reaction, most midwives somewhat disagreed (32%) or disagreed (51%) that it is hard for them to advise women to abstain (TDF domain: beliefs about capabilities) (figure 8). The qualitative data therefore seems to support the notion that midwives don't find it hard to advise women, but there are some concerns about their reactions to being advised to abstain.

Figure 8. Midwives' perception of whether it is hard to ask women to advise women to abstain (n=834)



One aspect of providing advice that was discussed was a midwife's own personal attitudes towards alcohol. One survey question focused on potential attitude towards drinking during pregnancy by asking midwives whether they would drink any alcohol if they got pregnant now. Of the 833 midwives who answered the question, 79% strongly agreed, 11% agreed, 4% somewhat agreed and the remaining 6% were either ambivalent or disagreed to some extent. Fewer than 1% strongly disagreed that they would abstain.

The midwives who took part in the qualitative study did not express personal views that conflicted with the guidelines, but suggested others might. However, a central part of advising women about alcohol was confidence and participants suggested that some midwives might not have sufficient confidence in advising women, nor having pathways for women who disclose that they are drinking.

> *Maybe (they) just feel a bit uncomfortable about it and maybe not too sure about the guidance themselves and maybe not enough places to signpost women to if they do find out that they are still drinking heavily (England, interview 2)*

Navigating conversations also meant addressing potential fear and anxiety women might have, particularly around drinking before knowing about the pregnancy. Whilst all midwives supported the abstinence message in the guidelines, advising women who were worried meant having to approach the advice differently. One midwife described it as needing to 'couch the message', to avoid further anxiety.

> *I would give them the same information, you would maybe couch that a wee bit different and say 'there is nothing we can do about that now, you had a drink at that point and from now I would advise you, you know, the advice is the same to not drink during pregnancy, it is unlikely that you have caused any great harm but if you are worried about the amount you were drinking we'll note that down and then speak to your obstetrician or your GP about that' (Scotland, interview 3)*

Skills and knowledge of discussing alcohol with women were intrinsically related to confidence. Having a good core knowledge of harms associated with alcohol use during pregnancy was seen as increasing the confidence midwives have in asking questions around alcohol consumption.

On the other hand, lack of knowledge was described by one participant as a main barrier for midwives to engage in the conversation, as she believed that midwives who don't have enough knowledge on alcohol would not want to further pursue the conversation. As a result, she believed that the section of the guidelines stating that the risk of harm with consuming small amounts of alcohol before pregnancy recognition is used by midwives to reassure women without having to take the conversation further.

> *I think if you reassure them you can get off the subject as well then. Because... that is probably because midwives don't have the depth of knowledge to discuss that further (England, interview 1)*

Midwives discussed that the lack of core knowledge regarding alcohol and alcohol-related effects is due in part to limited coverage in undergraduate midwifery programs. Yet, in the sample some participants were in specialist roles where they had more training post-qualification around alcohol and substance use more widely. Having a good understanding of potential alcohol-related harm during pregnancy was linked to confidence in having the conversation with women, particularly around communicating the risk of FASD. Again, balancing provision of information without causing fear and anxiety were noted as specific aspects of communication skills that midwives need to develop; "lack of knowledge from midwives really and how do you tell someone that they might be brain damaged as well…" (Wales Focus group). Developing clinical skills also meant working together with other health and social care professionals, importantly through clinical pathways. Several participants identified that having a clear process, such as a vulnerability pathway helped their confidence in conducting an assessment of drinking.

> *What is it that will support those women and what information and what services are available and how do you signpost them and how do you keep their trust [...] so that we can still work with them, and I think that's a big thing for midwives (England, focus group)*

Finally, developing effective communication skills was seen as a priority area by the majority of participants. While some stated this was learnt on the job, others attributed their finely attuned skills to specific training involving evidence-based, evaluated, alcohol intervention strategies, which enhanced their interpersonal skills; "It's a bit like what you're saying with the mandatory training of ensuring that every midwife has the skills, they have those conversations" (Wales, focus group)

Opportunities for supporting practice

Education and training

The results from the survey showed that 43% of midwives had received fewer than two hours of training, on alcohol, 26% had received two to four hours, and 19% had received no training before they qualified as a midwife (figure 9). Post-qualification, fewer midwives had received alcohol-related training, but a small minority had received more than eight hours.

Figure 9. Hours of training on alcohol use and pregnancy before and after qualifying as midwifery (n=834 and n=835)

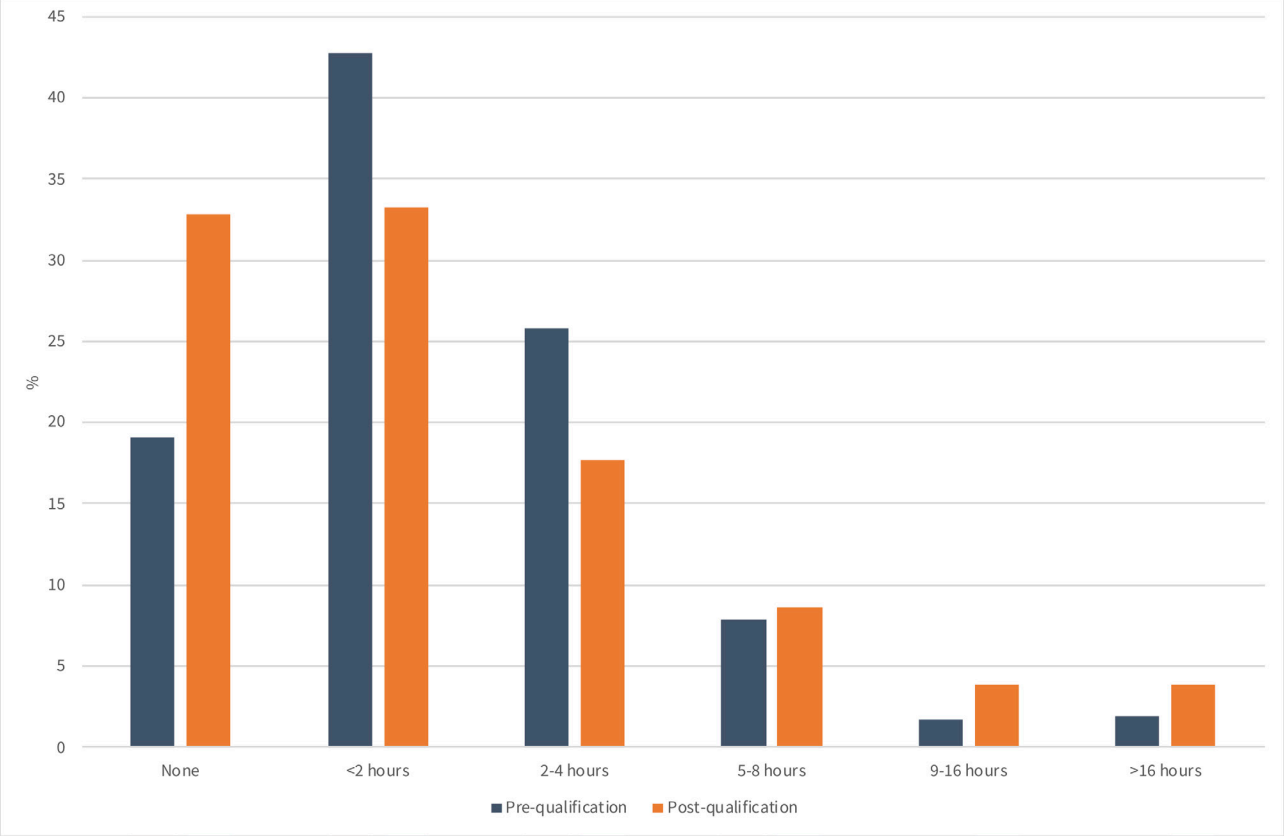


Table 12 shows the distribution of hours of training along with who provided the training before qualifying as a midwife. Before qualifying, training in alcohol had primarily been delivered by higher education (eg university) or School of Nursing or Midwifery, whereas post-qualification the most commonly reported training provider were local healthcare providers (NHS/HSC/PCT/Health Board) (33%), local authority (18%), or local or national charities (10%). In addition to the training midwives had undertaken before and after they qualified, participants were asked whether they are offered regular (eg annual) training updates on alcohol and pregnancy. Of the 832 midwives who responded to the question, 25% answered yes, leaving 73% not being offered annual updates on the topic.

Table 12. Provider of training on alcohol and pregnancy before and after qualifying[1]

		n	%
Pre-qualification	Higher education	415	49
	School of Nursing or Midwifery	280	33
	NHS/HSC/PCT/Health Board	26	3
	Local authority (e.g. drug and alcohol team)	45	5
	Local or national charity (e.g. NOFAS)	51	6
	Private company (e.g. Diageo)	5	<1
Post-qualification	Higher education	61	7
	School of Nursing or Midwifery	71	8
	NHS/HSC/PCT/Health Board	276	33
	Local authority (e.g. drug and alcohol team)	150	18
	Local or national charity (e.g. NOFAS)	87	10
	Private company (e.g. Diageo)	8	1

1 Categories were not mutually exclusive

The qualitative results supported the findings on alcohol-related training either pre- or post-qualification. Overall, alcohol training appeared to have been obtained as part of specialist training or additional courses that the participants sought out themselves, as opposed to being offered as part of core midwifery training. Many participants stated that the skills and knowledge to assess risk factors, such as alcohol, were not covered adequately in their core midwifery programmes, however there was some indication that midwives who were trained more recently had received more training around the subject.

> *Nothing of any note that I can remember in my training, but I did my training back in 1993 so it probably wasn't as widely talked about then (England, Interview 2)*

> *They kind of like hammer it home, so that the new midwives coming out (of university) have the fresh information, because that's how the more senior staff do learn about things when students come in and they tell you (Northern Ireland, Interview 2)*

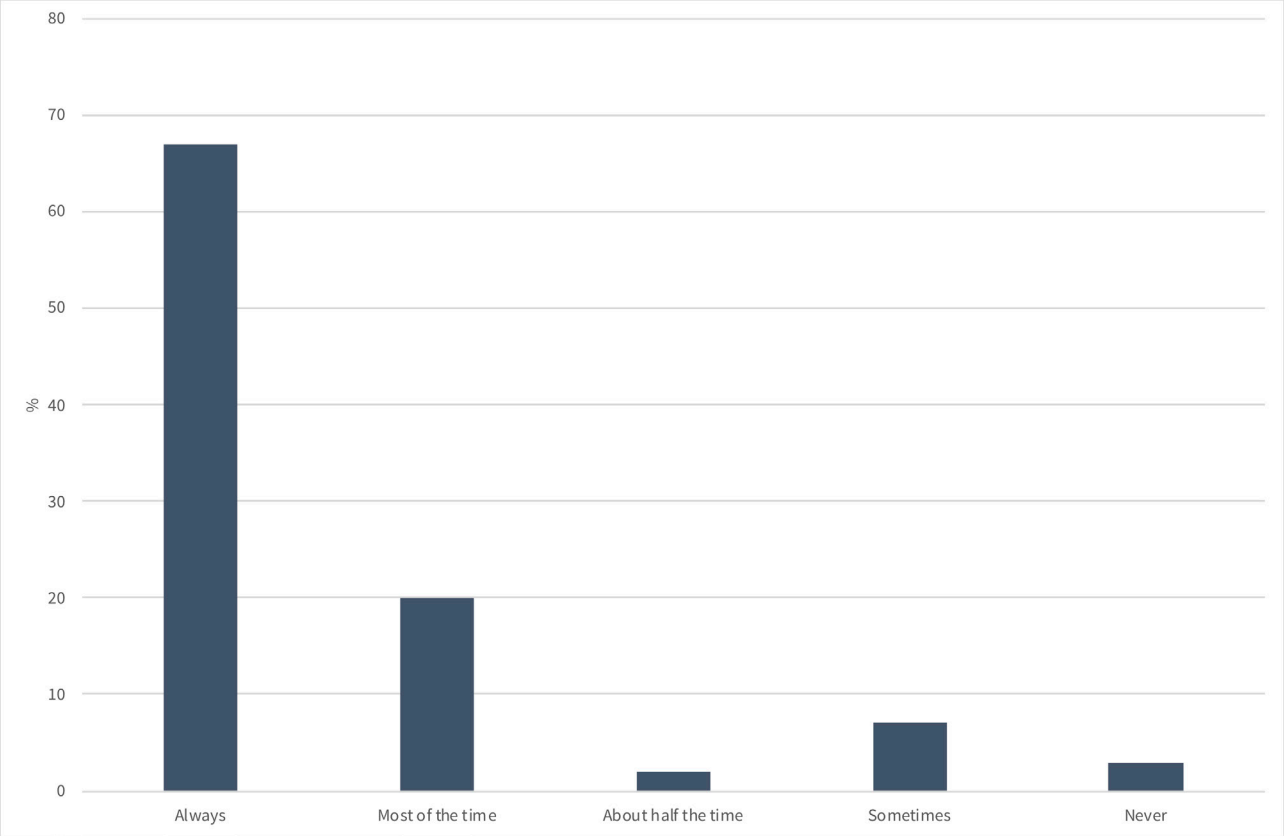
Several participants actively sought out literature or training opportunities to inform themselves on alcohol or other maternity care-related topics. However, some argued that not all midwives actively seek out information, with one midwife arguing that "unless it completely impacts the midwife in their role, they don't usually go out, do a lot of research on certain topics" (Northern Ireland, interview 3). This reflected the findings from the survey, where post-qualification it appears that midwives seek out training, with higher proportion having undertaken more hours of training post-qualification. While many suggested it made sense to incorporate alcohol training within annual mandatory training sessions, which was done in some of the locations where the midwives worked, there were challenges with doing so due to having many topics on the agenda and content of the trainings often being set in advance, preventing adding additional topics on.

In addition to annual mandatory training sessions, there were other ad hoc learning opportunities within practices or clinics, with some referring to monthly meetings where staff get updated on relevant guidelines or practices; "we do a 'guideline of the month', so it's really interesting because we discuss it and then you are more up-to-date about it" (Scotland, interview 1)

Systems and support

Within the survey, midwives were asked what methods they have available to them to record the advice given to women. Paper-based records were reported by 57% and electronic records by 57%. Surprisingly, 13% reported having no system for recording the advice given. Most midwives reported recording the advice given to women 'always' or 'most of the time' (see figure 10).

Figure 10. Frequency of recording the advice given (n=832)



Within the qualitative component, documentation was identified as an important factor that could help or hinder alcohol being addressed in pregnancy. All midwives commented upon the expected practice of asking women questions which are standardised either in handheld maternity records or on computerised systems. Lack of routine enquiry in their systems and incomplete forms was discussed by several participants, and in some local areas alcohol records were audited to address gaps within reporting systems. Several participants noted a lack of consistency in reporting, ranging from trust level to regional level, but was also evident at the national level. For example, in the Welsh focus group, participants discussed the various IT systems used within trusts and the IT systems reported by interview participants differed between the nations.

Responses varied around what was recorded in the woman's record (electronic or handheld), but many liked having a template. Two participants commented that the added value of a recording system was to remind midwives to ask the question in terms of providing a useful prompt; "(it is) good to be reminded to bring it up and to let them know there is support available if they needed it" (Scotland, interview 4). On the other hand, the risk of a standardised question to become a tick-box exercise was noted as the opposite of the 'open conversation' they believed was needed to elicit information about women's drinking.

> *It's very easy if you just go through the SWHR document questions it's very easy to come to the alcohol questions and to say 'so the advice is to not drink in pregnancy – have you drank before pregnancy? Can you tell me how many drinks you have? Do you drink in a club or at home' you know you can just fire questions and you know that you're not gonna get the best out of somebody when you're just sounding possibly a wee bit judgemental* (Scotland, interview 3)

However, a few participants also noted that having questions as mandatory parts of the booking assessment, for example, helped indicating to women that they were not being specifically targeted but that the question is asked to everyone. In a way, this was seen as potentially reducing stigma related to asking about alcohol and pregnancy. Having set, mandatory questions was also seen to facilitate providing the same key message and access to the most appropriate services/referral pathways as it assisted midwives in putting the woman through the correct care pathway.

Through the discussions it became evident that the way that alcohol is addressed and the attention that it is given varies between maternity systems across the UK, yet there were commonalities in approaches within maternity care in general. The continuity of carer model was seen as supporting building a trusting relationship with women over the course of the pregnancy, which in turn supports having conversations about sensitive topics. The model, which enables a holistic and woman-centred approach, was described as a good way of delivering maternity care for all women. Specifically relating to alcohol, midwives believed that disclosure is more likely under a model where the midwife gets to know the woman.

> *I know every health board's dealing with it different and we have a massive push to ensure that we are delivering continuity of care now, but for me that's a huge indicator to kind of get clear information from women (Wales, focus group)*

Discussion

This is the first study to report on awareness and implementation of the revised CMO guidelines among health professionals in the UK, as well as the first to report specifically on implementation by and views of midwives in the antenatal care setting. The results show that around one in three midwives lacked awareness of the guidelines and to some extent their content. Nonetheless, at the initial booking appointment, 91% do advise women in line with the overall recommendation to abstain from alcohol during pregnancy.

There were variations in practice behaviours at appointments other than at booking and according to midwives' perceptions of drinking behaviour and potential alcohol-related harm of women in their care. The use of the TDF to investigate the behavioural determinants of midwives' practices regarding advising women to abstain from alcohol during pregnancy indicated that midwives see it as part of their role and are motivated and intend to advise women. However, the main barriers were related to how the message might be received by the pregnant woman herself and lack of pressure to address this issue from the wider clinical team within which the midwife worked.

Additional barriers were a lack of belief that it was worthwhile or rewarding and that it would have an impact on a woman's drinking behaviour. The survey data also indicated that midwives lack confidence in their abilities to advise women, which the qualitative data suggested was related to their knowledge regarding alcohol-related harm to facilitate in-depth discussions with women without causing upset.

The following sections will discuss the findings in relation to the existing literature as well as their limitations and implication for research, policy and practice.

UK midwives' awareness of the CMO guidelines

Our study showed that around one in three midwives were not aware of the CMO guidelines and there were some inaccuracies in reporting of their content, aligning with previous guidelines. The CMO guidelines changed after a review of the evidence, which for pregnancy included a significant shift from the previous 'lower risk' approach to complete abstinence (Department of Health, 2016). Considering this major shift, significant communication of the guidelines would have been expected to ensure that health professionals, as well as the public, were aware of them and their content. In the UK, a survey conducted with the general population shortly before and after the revised CMO guidelines were published showed that 71% were aware that the guidelines had changed, however only 8% could accurately state what they were (Rosenberg et al., 2018). Such findings reflect research on the awareness and knowledge of the previous (1995) drinking guidelines, which found that around two fifths reported knowing what the recommended limits were, yet of those stating they were aware only 66.2% could accurately state their gender's limit (Buykx et al., 2018). Our findings indicate that this was not the case as there still is a large proportion of midwives who are not aware of the guidelines.

In May 2019, the Scottish Government and NHS Health Scotland launched a campaign, called 'Count 14', focusing on increasing the awareness of the revised guidelines of 14 units per week for both men and women (NHS Health Scotland and The Scottish Government, 2019). The campaign follows a commitment within the new Alcohol Framework to increase the awareness of the CMO guidelines (Scottish Government, 2018), however the 'Count 14' campaign does not mention pregnancy on the campaign website (but is available when accessing more detailed information on NHS Inform). Our qualitative findings added to the survey results by suggesting that midwives may be aware of abstinence as the recommendation they follow, but not know them as the CMO guidelines. Additionally, one participant specifically mentioned that midwives might be more inclined to refer to

NICE guidelines, which only changed to refer to the CMO guidelines in December 2018 (NICE, 2008b). It therefore seems that effective communication of the guidelines at the policy level down to practice level has been lacking.

Our results, whilst to be interpreted with caution due to the small sample sizes in the smaller nations, suggested that more midwives in England reported recommendations for CMO guidelines in line with the previous NICE guidelines. This may be because there have been different levels of communication of the guidelines within the UK nations. The CMOs for Scotland and Wales endorsed an abstinence message ahead of the revision involving the four UK CMOs in 2016 (IAS, 2015; NHS Health Scotland, 2010), and training in Northern Ireland included promotion of an abstinence message when it was set up in 2013 (Reid and McStay, 2018), which may explain these differences.

However, it is important to acknowledge that these findings also sit within wider differences in alcohol policy and awareness of alcohol as a public health issue across the UK. An analysis of alcohol policy across the four nations highlighted that overall, Scotland had the strongest alignment with evidence-based policies set out in the Health First report and variation in the framing of alcohol as a public health issue. Additionally, the use of evidence to inform policy differs across the UK (Fitzgerald and Angus, 2015). Different approaches, such as the implementation of Minimum Unit Pricing (MUP) in Scotland (Scottish Government, 2018), and plans for implementation in Wales in 2020 (Welsh Government, 2019), may have an important impact on the general public's perception of alcohol as a public health issue as well as framing the debate around alcohol problems. Particularly, the commitment to FASD prevention in the new Alcohol Framework (Scottish Government, 2018), which follows a decade of delivery of Alcohol Brief Interventions (ABIs) in antenatal care, may impact midwives' awareness of alcohol problems and current guidelines.

Implementation of the guidelines

The findings around implementation of the guidelines showed, that despite low awareness of the CMO guidelines, midwives do advise women in line with them. The high proportion of midwives who advise abstinence at booking is reassuring, however, a surprising finding perhaps was the significantly lower proportion who advised during other appointments. This seemed to be in contrast to the qualitative findings, which rather suggested that midwives focused on developing a good relationship with the woman at booking and therefore at times deferred addressing alcohol until a relationship had been established. The WHO guidelines on substance use and misuse during pregnancy state that "Asking at every visit is important as some women are more likely to report sensitive information only after a trusting relationship has been solidly established" (WHO, 2014, p. 8).

As previous studies on whether alcohol has been addressed during antenatal care have not specified when it was addressed (Payne et al., 2014), this finding could inform midwifery practice. This may be important for two reasons. Firstly, due to the relationship building and how women may not disclose alcohol use until a relationship has been established, which has previously been identified as a barrier for midwives to address it at the first antenatal visit (Doi et al., 2014). Secondly, because alcohol consumption data are not routinely recorded at any point during pregnancy throughout the UK, there is a lack of knowledge on the extent to which women may restart drinking later in pregnancy (previous guidelines highlighted the need to abstain during the first month).

The qualitative data suggested there might be varying degrees to which midwives talk about alcohol. None of the participating midwives described skipping over the conversation but spoke about things like using 'red flags' as indicators that an extended conversation is needed. This reflects an Australian study by Jones et al., (2011) who interviewed midwives and women about their perception of discussing alcohol in antenatal care. When women said they were non-drinkers, midwives tended not to provide risk reduction information but more extensive conversation was had if they admitted

to drinking. Considering the common theme of midwives believing that women are not 'honest' about whether they are drinking, providing advice may be important regardless of the woman's response. Not prioritising alcohol as a topic to cover within the appointments was however an identified barrier and reflects qualitative work among midwives in the UK suggesting that the increased public health remit for midwives means they have many topics to cover in the appointments and time restrictions may therefore mean less time spent on certain topics. In fact, alcohol was highlighted as a topic that was less often discussed, along with, for example, domestic violence, diabetes, and drug/substance misuse (RCM, 2017). It therefore seems that our findings support such notions that alcohol is a topic that may not be discussed in detail, however with the findings indicating barriers to implementing the guidelines this could inform improving approaches that may encourage midwives to discuss alcohol more frequently.

As alcohol habits might revert to pre-pregnancy levels after birth, we were also interested in assessing to what extent midwives discussed post-pregnancy alcohol use in relation to breastfeeding, co-sleeping and parenting. There was a significant difference in the proportion of midwives who covered these topics, with co-sleeping being most commonly addressed either always or usually (91% of midwives). This reflects data from RCM, which suggests that midwives frequently discuss sudden infant death syndrome (SIDS), as well as breastfeeding, but as alcohol was one of the topics less frequently discussed it might not be a priority to discuss post-birth alcohol use (RCM, 2017). These findings, whilst not a key focus on our study, are worthy of further exploration in future research.

In relation to the practice of asking and advising about alcohol, the lack of use of screening tools was an interesting finding. Many midwives (71%) reported not using a validated screening tool, which is congruent with previous studies (Holmqvist and Nilsen, 2010; Howlett et al., 2019; Wangberg, 2015). A systematic review by Burns et al. (Burns et al., 2010) assessed the sensitivity and specificity for self-reported alcohol screening tools, showing that three tools (T-ACE, TWEAK and AUDIT-C) appeared valuable for identifying risky drinking in pregnancy. However, Burns and colleagues cautioned their utility as stand-alone instruments and called for further research into their effectiveness in identifying women who drink at defined 'risky' levels. Despite limited knowledge of how effective these tools are in practice, the WHO has stated that the choice of specific tool to use should be guided by the practices of the locality or country, however, a validated tool should be used (WHO, 2014).

Our findings suggest that midwives value the use of screening tools as they have a consistent framework and agree that the discussion should be integrated within routine enquiry. However, their desire is to keep communication open which may not always correspond well with using a structured screening tool. Some midwives also cautioned that screening tools may lead other midwives to use them in a 'tick-box exercise' fashion. Chiodo et al., (2019) found that screening activity among American midwives and nurses was linked to midwives' perception of the safety of alcohol consumption. In total, 37% considered alcohol to be safe at some point during pregnancy and 35% screened their patients for alcohol use at least 'most of the time'. A significantly higher number of practitioners who perceived any alcohol use to be unsafe also screened their patients for alcohol use compared to those who considered it safe (32% and 4%, respectively, $p<0.05$).

Our study did not set out to explore midwives' attitudes towards the safety of alcohol use during pregnancy, but this may be worth exploring further alongside attitudes towards guidelines and other behavioural components that may influence behaviour. Particularly, one needs to consider whether the use of screening tools helps: i) midwives in having the conversation about alcohol, and; ii) women feeling comfortable with reporting alcohol use, if they are drinking.

Influencing factors on practice behaviour

Using the TDF as a theoretical framework for this study has helped identify some of the challenges with implementing the guidelines in midwifery practice. The results indicate that the midwives see providing advice on alcohol as part of their role and that it is expected of them, and they have intentions to do so. These factors act as levers to midwives' discussions with pregnant women about alcohol consumption during pregnancy. However, sometimes other things get in the way of these discussions, as there is insufficient time to carry out everything required, particularly at booking. Qualitative research conducted for RCM highlighted that time, resources, competing demands and an increased public health remit acted as barriers for midwives to fulfil their role within public health (RCM, 2017). This mirrors our findings as time and competing priorities were mentioned whereby midwives believed alcohol may not get covered sufficiently when women say they are not drinking.

Specifically, the RCM report found that 77% of surveyed midwives responded that they needed more time for the antenatal care booking appointment, 56% needed more time for low risk follow-up appointments, and 86% needed more time for high risk follow-up appointments (RCM, 2017). The wider pressures within midwifery care are important to consider in relation to the feasibility of addressing alcohol, particularly the fact that in England alone there is a shortage of 3,500 fulltime midwives (Royal College of Midwives, 2019). Whilst births have reduced, the increased complexity of care puts pressure on the workforce and influence the capacity to, for example, address alcohol at follow-up appointments.

There was also some ambivalence regarding the guidelines representing the best available evidence, and whether the advice would lead to behaviour change regarding the pregnant woman's alcohol consumption. Other factors influencing implementation involved midwives forgetting to discuss the topic of alcohol, and not having a clear pathway or recording system in place requiring complete and consistent mandatory recording of alcohol consumption.

Four domains of the TDF (Social influences, Beliefs about consequences, Beliefs about capabilities and Emotion) were identified as potentially relevant to changing midwives' behaviour in relation to advising women to abstain from alcohol during pregnancy. The findings from both the quantitative and qualitative phases indicated that specific elements within each domain acted as barriers to implementation. Midwives expressed that they believe they lack self-efficacy and specific communication skills to effectively address alcohol with women without compromising the trust and relationship they are building during antenatal contacts. Additionally, lack of finding it rewarding or worthwhile and lack of pressure or expectation from senior colleagues to take up this topic with women acted as barriers. These findings suggest potentially useful targets for interventions aimed at improving implementation of the guidelines. The TDF domains, however, focused on implementation of the CMO guideline and with the NICE guidelines still in place, suggesting smaller amounts may not be harmful, this may have influenced midwives' interaction with women and the responses they gave to the survey questions.

Lack of communication skills, and time are barriers that have been identified in other studies evaluating midwives' practices. Most recently, a study that evaluated the perceived barriers to screening for alcohol consumption during pregnancy in a sample of 578 American midwives, nurses and nurse practitioners registered with the American College of Nurse-Midwives reported that the highest ranked barriers were lack of time and patient denial followed by lack of training and patient sensitivity (Chiodo et al., 2019). Patient sensitivity was mentioned by several midwives in our study who were concerned about maintaining a good relationship with women. This echoes an Australian study which indicated that while 86% of midwives believed advising women would promote behaviour change, 53% agreed that it would lead to women feeling judged and 44% believed it could distress or anger women (Payne et al., 2014).

Supporting midwifery practice

Training and education are key components to equipping the workforce with the knowledge and skills to address the topic of alcohol, something that our study suggests could be improved. Our findings indicate that most midwives had received fewer than four hours training on alcohol in their pre-qualification education. Post-qualification the number of hours of training were still low, but a higher proportion of midwives reported more than four hours of training compared to pre-qualification, suggesting that some midwives may be keen to get more knowledge on the topic and seek out training opportunities. This was supported by our qualitative findings, as midwives noted that lack of coverage on alcohol within annual updates drive midwives to seek out training opportunities to inform their practice. The survey found that 73% were not offered annual updates on alcohol, suggesting there is room for improvement in relation to keeping midwives knowledge and skills current regarding alcohol through regular updates. This is particularly relevant as data from the RCM suggests that about 45% of midwives had covered alcohol in their university training, just under 40% had covered it in independent e-learning, and just over 30% had covered it in in-house CPD updates (RCM, 2017).

One factor midwives mentioned was that older midwives, which we have interpreted as a proxy for time since undertaking their training, who participants believed might not have had as comprehensive coverage of alcohol in their undergraduate education. The midwifery workforce in the UK is ageing; around a third of midwives in England and Wales and around 40% in Scotland and Northern Ireland are over 50 years (RCM, 2016). The lower coverage of alcohol in undergraduate training, which for older midwives may be some time ago, suggests that efforts to offer CPD courses or self-directed e-learning to midwives who qualified less recently is a priority.

Training initiatives around alcohol and pregnancy vary throughout the UK. In England, training of midwives was allocated funding in 2011 through the Public Health Responsibility Deal in England, where the alcohol company Diageo pledged to fund a three-year project to train of 10,000 midwives (Cooper, 2013). In Scotland, training of all midwives forms part of the national ABI programme, launched in 2008 (Scottish Government, 2009) and in Northern Ireland training was rolled out through an alcohol liaison midwifery service which was funded by the Big Lottery Fund (Reid and McStay, 2018).

Previous research has shown that midwives who undertook brief intervention training in the past two years had more positive beliefs about capacity to address alcohol with pregnant women (Watkins et al., 2015). In addition, a Swedish study found that midwives who had received more education around dealing with risky drinking were more likely to use a questionnaire to assess women's pre-pregnancy alcohol use. More training was also associated with initiating counselling if a woman was identified as having risky drinking behaviour prior to pregnancy (Holmqvist and Nilsen, 2010). However, this needs to be balanced with the issue of lack of time in appointment and competing priorities (RCM, 2017), which also act as barriers. However, ensuring that structured training is provided to keep midwives up-to-date is needed and whilst several initiatives have been introduced throughout the UK, our findings show that more needs to be done to reach midwives with structured training around alcohol.

Importantly, training and educational initiatives tend to address only knowledge and skills barriers. Our work identified additional barriers. For example, midwives perceived that women disliked being advised on advice about abstinence. In this instance, an intervention involving encouragement, pressure and support (Michie et al., 2008) from pregnant women would be the most appropriate. For example, this may involve the use of service user images and words on materials to support best practice, or indeed, advice on service user pregnancy materials encouraging them to ask their midwives about alcohol consumption in pregnancy. In another example, midwives did not believe

their advice would have impact on the service user in terms of influencing their drinking behaviours. These determinants are influenced by interventions that involve monitoring and feedback (Michie et al., 2008). This may involve providing audit data on numbers of women that stop drinking after advice. The important message here is that interventions to improve practice should not focus solely on knowledge and skills deficits but instead consider the bigger picture of factors influencing practice.

Limitations

Our sampling frame for the survey did not generate a random probability sample, as would be ideal to confidently draw conclusions from the results. The sampling strategy available to us was a convenience/snowball sampling method, which still generated a relatively large sample of midwives. Whilst our sample largely corresponded to the proportion of midwives working within each of the four UK nations, they may not be representative of the population regarding alcohol-related knowledge, practices and beliefs. This may be indicative also from the qualitative phase, which primarily (but not exclusively) included midwives who had a specialist interest in substance misuse or had specific training (eg in training midwives in ABIs). It is therefore possible that our sample, for both phases, primarily represents midwives who have a specific interest in the topic. Furthermore, many midwives who took part in the qualitative phase had not undertaken a booking within the last year and may have different experiences to midwives who regularly carry out bookings.

The current pressures on midwives working within maternity care services, along with access to contact details such as email addresses through professional organisations, questions whether a true random sample would be possible in future research. As the research burden also is high on midwives, a wider discussion is how to best recruit midwives for research. Another limitation to acknowledge is that the current study focused on the CMO guidelines and the survey questions focused on the abstinence message in these guidelines as opposed to the recommendations covered in the concurrent NICE guidelines. It is therefore unknown, within this sample, to what extent midwives might give the abstinence advice as well as recommendations in line with the NICE guidelines in place when the survey was launched.

A key question that was discussed in the stakeholder group was midwives' own alcohol consumption. Research suggests health professionals' own behaviours might influence the advice they give (Kaner et al., 2006). However, for this project the decision was made to not include questions about midwives own drinking as that changed the focus from their professional role to their personal behaviours. The hypothetical question about drinking during pregnancy was instead added to gauge some personal attitudes towards the guidelines. Further limitations relate to the recruitment of several midwives who were in specialist roles where they may not be the first point of contact for women, as they will rather get referred to them. Additionally, the pilot focus group were midwives who also work in higher education and the Welsh focus group included a few midwives with research roles. These midwives may therefore have different views or insights compared to midwives who provide first point of contact care to women and have not undertaken specialist or research training. Nonetheless, these midwives provided valuable insight into the practices of midwives more broadly. Finally, whilst postcodes were available for most survey respondents, we lack essential details on whether responses were clustered from within the same units in specific localities.

Conclusions

This study found that awareness of the CMO guidelines is lacking among some midwives; and although most advise women to abstain from alcohol during the booking appointment they do not routinely provide such advice at subsequent appointments. There is no standardised approach to addressing alcohol consumption during antenatal appointments. This means that the assessment and recording of alcohol consumption is inconsistent across the UK or within each country. Midwives accept the guidelines in principle and believe that it is important for women to be supported to make informed choices. Use of the TDF in the research helped understand the factors that influenced midwives' alcohol-related practices and suggest that interventions that aim to improve midwives' competence and confidence to deliver not just an abstinence message but an effective alcohol intervention appropriate for the level of risk of the woman's drinking may facilitate midwives' alcohol-related practices. It is important to consider the variation in policy between the different UK nations to understand how midwives approach the topic of alcohol in their practices, and how wider policy agendas and debates may influence their attitudes.

The findings from this study provides novel insights into barriers and facilitators in providing abstinence advice in antenatal care, with implications for policy, practice and research (see box 2).

Box 2. Recommendations for research, policy and practice

For research

- To develop and test effectiveness of an intervention that supports midwives addressing alcohol consumption with women during antenatal appointments
- To explore awareness of the CMO recommendations for pregnancy amongst other health professionals working with women accessing maternity services such as midwifery support workers, health visitors and obstetricians.
- To identify opportunities and strategies within integrated care to deliver a common message on alcohol throughput the health service
- To understand which screening instruments or questions are best to use in maternity settings
- To explore why women who drink during pregnancy may not be 'honest' with their drinking and how that can be addressed by midwives

For policy

- In line with recommendations from the BMA (BMA, 2018), ensuring that the CMO guidelines are communicated to health professionals as well as the general public. This includes communicating the rationale for the precautionary principle to provide 'open' information about known risks
- Invest in work on how to establish a routine enquiry about alcohol consumption, covering pre-pregnancy, at booking and subsequent appointments. This would i) inform current practice and identify areas for targeted interventions ii) gain a better understanding of consumption patterns across the country, and iii) establish alcohol as an important public health issue for maternity services and promote a unified response. This needs to consider the wider pressures for midwifery services and the limited time available within appointments to address many public health and clinical factors.
- Assess how policy and guidelines can be set up to reflect the WHO guidelines and to be more universal across the UK

For practice

- Where possible and appropriate, include alcohol in annual mandatory updates or other training or information opportunities for staff to ensure all midwives are up-to-date with the current guidelines.
- Within training and information across the health service address the fact that guidelines have changed over time and especially note that the NICE guidelines have been updated to refer to the CMO guidelines.
- Incorporate effective communications training within alcohol modules that focus on how to address alcohol consumption before pregnancy recognition, to ensure that midwives feel comfortable with providing advice that support the guidelines whilst also providing reassurance and information to women to alleviate potential anxiety
- Work across professional groups (midwives, obstetricians, GPs etc.) to ensure that a coherent message is communicated across the health services.

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Appendix A

Midwives' Assessment of Expecting Mothers' Alcohol use (MAMA) project Expert Roundtable Meeting

Participant	Affiliation
Katherine Brown (Chair)	Institute of Alcohol Studies
Dr Lisa Schölin	University of Edinburgh
Professor Lesley Smith	University of Hull
Sue Taylor	Balance North East
Sandra Butcher	NOFAS-UK
Alison Baum	Best Beginnings
Ruth Rothman	Family Nurse Partnership
Clare Livingstone	Royal College of Midwives
Anna Lucas	Public Health England
Pip Williams	Euro Birth Mothers
Obi Amadi	Unite the Union
Andrew Misell	Alcohol Concern Wales
Heather Trickey	DECIPHer
Dave Boulger	Population Health Transformation
Hilary Wareing	Improving Performance in Practice
Professor Sir Al Aynsley Green	British Medical Association
Anne-Marie Winstone	PIND Research Group, Addenbrookes NHS Trust

Appendix B

Questionnaire

Thank you for taking the time to follow this link. Answering questions 01 and 02 is required in order to determine your eligibility to participate in the survey.

The questionnaire should take you about 15–20 minutes to complete.

Although some questions might seem similar or repetitive, your responses are important to us because we want to understand the experiences of a large, representative sample of midwives when discussing alcohol with pregnant women at different times.

As a token of our appreciation for completing the questionnaire your name will be entered into a prize draw for a chance to win 1 of 3 £100 John Lewis vouchers. Please enter your contact details at the end of the questionnaire if you want to be included in the prize draw.

The information you give will not be made available to anyone who is not a member of the research team. All information you give will be anonymous and treated as strictly confidential. Please try to answer all the questions as accurately as possible

Please tick this box if you are happy taking part in the survey ❑

01. Are you currently working as a midwife?

❑ Yes
❑ No

02. Where are you working as a midwife?

❑ England
❑ Wales
❑ Scotland
❑ Northern Ireland
❑ Outside the UK

If response to question 01 and/or 02 is no/outside the UK, the following text will be displayed:

Thank you for your interest in taking part in this survey, however at this time we are only looking for midwives who are currently practicing as midwives inside the UK.

Section 1: Practices

This section asks you to tell us what information you gather from women and what you advise them about alcohol during pregnancy. Please note that some questions refer to all women whilst others refer only to a particular group of women, as specified.

1. At booking, please indicate the extent to which you gather information on the following factors from all women regarding alcohol consumption during pregnancy (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
Drinking behaviour before the current pregnancy	❑	❑	❑	❑	❑
Drinking behaviour during the period between conception (if known) and recognition of the current pregnancy	❑	❑	❑	❑	❑
Quantity of current alcohol intake	❑	❑	❑	❑	❑
Frequency of current alcohol intake	❑	❑	❑	❑	❑
Frequency of current 'binge' drinking (drinking > 6 units on a single drinking occasion)	❑	❑	❑	❑	❑

2. At booking, please indicate the extent to which you provide the following advice to all women regarding alcohol consumption in pregnancy? (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
To abstain from drinking alcohol	❑	❑	❑	❑	❑
To avoid drinking alcohol in the first 3 months of pregnancy	❑	❑	❑	❑	❑
It is OK to drink 1–2 units once or twice per week	❑	❑	❑	❑	❑
To avoid binge drinking (>6 units on a single drinking occasion)	❑	❑	❑	❑	❑
No specific advice	❑	❑	❑	❑	❑
Discuss the effects of alcohol on mother and baby	❑	❑	❑	❑	❑

3. Other than at booking, how often do you advise or do the following, with all women? (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
To abstain from drinking alcohol	❑	❑	❑	❑	❑
To avoid drinking alcohol in the first 3 months of pregnancy	❑	❑	❑	❑	❑
It is OK to drink 1–2 units once or twice per week	❑	❑	❑	❑	❑
To avoid binge drinking (>6 units on a single drinking occasion)	❑	❑	❑	❑	❑
No specific advice	❑	❑	❑	❑	❑
Discuss the effects of alcohol on mother and baby	❑	❑	❑	❑	❑

4. At booking, please indicate the extent to which you gather information on the following factors when you suspect that alcohol may be a problem (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
Any referral for a history of alcohol use	❑	❑	❑	❑	❑
Family history of alcohol abuse or dependence	❑	❑	❑	❑	❑
Drinking behaviour during previous pregnancies, if relevant	❑	❑	❑	❑	❑
Context that drinking takes place (e.g. alone/ socially)	❑	❑	❑	❑	❑
Drinking behaviour of partner	❑	❑	❑	❑	❑

5. Other than at booking, how often do you do or advise the following, when you suspect that alcohol may be a problem? (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
Assess for current alcohol use	❑	❑	❑	❑	❑
To abstain from drinking alcohol	❑	❑	❑	❑	❑
It is OK to drink 1–2 units once or twice per week	❑	❑	❑	❑	❑
To avoid binge drinking (>6 units on a single drinking occasion)	❑	❑	❑	❑	❑
No specific advice is given	❑	❑	❑	❑	❑
Discuss the adverse effects of alcohol on mother and/or baby	❑	❑	❑	❑	❑

6. At booking, if alcohol is identified as a problem, before or during pregnancy, how likely is it that you would do the following? (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
Provide advice or support about cutting down or abstaining	❑	❑	❑	❑	❑
Onward referral to an appropriate practitioner/ agency e.g. GP, Drinkline	❑	❑	❑	❑	❑
Complete a vulnerability pathway	❑	❑	❑	❑	❑
Take no action	❑	❑	❑	❑	❑

7. At any time during pregnancy, please indicate the extent to which you discuss the following with all women about alcohol use post-birth (Please tick one option from each row)

	Always	Usually	Occasionally	Rarely	Never
Recommendations about drinking alcohol when breastfeeding	❑	❑	❑	❑	❑
Alcohol and parenting	❑	❑	❑	❑	❑
Alcohol and co-sleeping	❑	❑	❑	❑	❑

8. If you enquire about alcohol consumption with pregnant women, please indicate if you use any of the following screening tools (Please tick all that apply)

- ❑ AUDIT
- ❑ AUDIT-C
- ❑ T-ACE
- ❑ TWEAK
- ❑ CAGE
- ❑ MAST
- ❑ Any other (specify) _____
- ❑ I do not use a named screening tool

9. Are you aware of the recommendations about alcohol and pregnancy stated in the Chief Medical Officer's (CMO's) Low Risk Drinking Guidelines?

- ❑ Yes
- ❑ No

10. To your knowledge, what is/are the recommendation(s) regarding alcohol consumption for pregnant women in the CMO's Low Risk Drinking Guidelines? (Please tick all that apply)

- ❑ Avoid alcohol all together
- ❑ If you have drunk small amounts in early pregnancy, it is unlikely that it has caused harm
- ❑ If you drink, limit yourself to 1–2 units once or twice per week after the first trimester
- ❑ Do not get intoxicated
- ❑ Do not binge drink (>6 units in one occasion)
- ❑ I don't know

11. Please indicate to what extent you agree with the following statement:

The CMO's Low Risk Drinking Guidelines are accurate and represent the best evidence available on alcohol and pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

Section 2: Views on asking pregnant women about alcohol and providing advice

In this section we are interested in finding out about your views on advising women on drinking alcohol whilst pregnant. Some of the questions may seem repetitive; however they each provide unique and important information.

12. For each statement below, please indicate your response on the 7-point rating scale going from 'strongly agree' to 'strongly disagree'.

12a. It is expected of me that I advise women to abstain from alcohol

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12b. Advising women to abstain from alcohol during pregnancy is harmful

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12c. I want to advise women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12d. I am confident that I could advise women to abstain from alcohol during pregnancy if I wanted to

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12e. Advising women to abstain from alcohol during pregnancy is not rewarding for me

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12f. My colleagues think I should advise women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12g. I do not intend to advise women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12h. I feel under pressure from my colleagues to advise women to abstain from any alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12i. The decision to advise women to abstain from alcohol during pregnancy is beyond my control

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12j. I expect to advise women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12k. Advising women to abstain from alcohol during pregnancy is not worthwhile

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12l. It is hard for me to advise women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12m. Whether or not I advise women to abstain during pregnancy is entirely up to me

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12n. Advising pregnant women to abstain from alcohol will not prevent alcohol-related birth defects

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12o. Advising pregnant women to abstain from alcohol has no impact on their behaviour

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12p. I have seen proof that pregnant women follow the advice to abstain from alcohol

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12q. Advising pregnant women to abstain from alcohol is part of my job

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12r. I sometimes forget to ask women about their alcohol use

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12s. There are other things I want to achieve in the appointment(s) with pregnant women that get in the way of asking about their alcohol use

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12t. I regret it if I don't advise women to abstain from alcohol

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12u. Women don't like it when I tell them to abstain from alcohol

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12v. I have a range of communication techniques for advising pregnant women to abstain, that I can apply based on the needs of the woman

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

12x. My superiors consider it important that I advise pregnant women to abstain from alcohol

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

13c. I am confident that I can inform pregnant women about the CMO's Low Risk Drinking guidelines

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

14b. I never have enough time to advise pregnant women to abstain from alcohol during pregnancy

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

15. Please indicate the degree to which you agree with the below statement about the CMO drinking guidelines:

15a. The CMO Low Risk Drinking Guidelines help me to build rapport with pregnant women

Strongly agree						Strongly disagree
❑	❑	❑	❑	❑	❑	❑

16. Are there any barriers that prevent or inhibit you from advising pregnant women to abstain from alcohol?

q Yes
q No

16a. If yes, please outline below what those barriers are: _____

17. Are there any situations or reasons where you do not advise pregnant women to abstain from alcohol?

q Yes
q No

17a. If yes, what are the situations or reasons?: _____

18. Please indicate to what degree you agree with the following, hypothetical, statement:
If I got pregnant now, I would not drink any alcohol during my pregnancy

Section 3: Education, training and resources

19. Is there a nominated person for alcohol in antenatal care in your health board/trust?

- ❑ Yes
- ❑ No
- ❑ I don't know

20. Do Midwifery Support Workers work alongside you in your health board/trust?

- ❑ Yes
- ❑ No

21. As part of which midwifery programme was your education on alcohol use during pregnancy provided? (Tick all that apply)

- ❑ Undergraduate
- ❑ Pre-qualification
- ❑ Postgraduate
- ❑ Post-qualification (if not ticked skip questions about post-qualification training)
- ❑ None of the above (skip to later question)

22. Who provided the education sessions on alcohol use during pregnancy that you received before you started working as a midwife? (Tick all that apply)

- ❑ Higher Education Provider i.e. a university
- ❑ School of Nursing or Midwifery
- ❑ National Health Service (NHS)/Health and Social Care (HSC) or Primary Care Trust (PCT)/Health Board
- ❑ Local Authority e.g. Drug and Alcohol Team (DAAT)
- ❑ Local or national charity e.g. Alcohol Concern, National Organisation on Fetal Alcohol Syndrome
- ❑ A private company e.g. Diageo

23. In total, how many hours of education on alcohol use during pregnancy did you receive before you started working as a midwife?

- ❑ None
- ❑ <2 hours
- ❑ 2–4 hours
- ❑ 5–8 hours
- ❑ 9-16 hours
- ❑ >16 hours

24. Who provided the education sessions on alcohol use during pregnancy that you received after you started working as a midwife? (Tick all that apply)

- ❑ Higher Education Provider i.e. a university
- ❑ School of Nursing or Midwifery
- ❑ National Health Service (NHS)/Health and Social Care (HSC) or Primary Care Trust (PCT)/Health Board
- ❑ Local Authority e.g. Drug and Alcohol Team (DAAT)
- ❑ Local or national charity e.g. Alcohol Concern, National Organisation on Fetal Alcohol Syndrome
- ❑ A private company e.g. Diageo
- ❑ I don't know/I can't remember
- ❑ Other (specify): _____

25. In total, how many hours of education on alcohol use during pregnancy did you receive after you started working as a midwife?

- ❑ None
- ❑ <2 hours
- ❑ 2–4 hours
- ❑ 5–8 hours
- ❑ 9-16 hours
- ❑ >16 hours
- ❑ I don't know/can't remember

26. Are you offered regular (e.g. annual) training updates on alcohol and pregnancy?

- ❑ Yes
- ❑ No

27. Please list resources that you can access to give to pregnant women on alcohol consumption during pregnancy and/or foetal alcohol spectrum disorder: _____

28. Is there a system in place where you record if you have advised pregnant women not to drink any alcohol? (Tick all that apply)

- ❑ Yes, paper-based records
- ❑ Yes, electronic records
- ❑ No

28a. How often do you record the advice you have given to pregnant women (please tick one)

Always	Usually	Occasionally	Rarely	Never
❑	❑	❑	❑	❑

Section 4: Demographics

29. What is your age group?

- ❑ 21–24
- ❑ 25–34
- ❑ 35–44
- ❑ 45–54
- ❑ 55–64
- ❑ >65

30. What is your ethnic group?

- ❑ White (English)
- ❑ White (Welsh)
- ❑ White (Scottish)
- ❑ White (Norther Irish)
- ❑ White (Other)
- ❑ Irish Traveller
- ❑ Mixed/ Multiple ethnic groups
- ❑ Asian/ Asian British
- ❑ Black/ African/ Caribbean/ Black British
- ❑ Chinese
- ❑ Arab

- ❑ Other ethnic group

31. Where did you gain your midwifery qualification?

- ❑ UK
- ❑ European Union (EU)
- ❑ Elsewhere

32. In what year did you qualify as a midwife? (YYYY): _____

33. For how many years since you qualified have you worked as a midwife?: _____

34. In which clinical setting do you currently work? (Tick all that apply)

- ❑ Hospital labour ward
- ❑ Hospital antenatal or postnatal ward
- ❑ Hospital antenatal clinic
- ❑ Midwifery-led unit attached to or inside a hospital
- ❑ Standalone midwifery-led unit in the community
- ❑ Community (not including a midwifery led unit)
- ❑ Rotational post
- ❑ Other: _____

36. When did you last carry out a booking?

- ❑ Within the last week
- ❑ Within the last month
- ❑ Within the last year
- ❑ More than 1 year ago

37. What is the first two letters of the postcode of where you practice? (this is just for enable us to contrast the results between different areas): _____

38. Would you be willing to fill in a survey in a few weeks time? (This is for testing of the validity of the survey items).

- ❑ Yes
- ❑ No

If yes, please provide your email address so that we can send you the link to the survey:

_____

Appendix C

Vignettes

Vignette 1 – Anna (consultation therapeutic relationship)

Patient Age:	22 years
Gestation:	17 weeks
Midwife Appointment:	Booking/antenatal
Parity:	0+1

Anna is 17 weeks pregnant, attending for antenatal booking, she failed to attend 2 previous appointments and made no contact with the midwifery team. During today's clinic appointment, you observe Anna to be anxious, she is unaccompanied and seems in a hurry. As part of your assessment, you ask 'Do you currently drink alcohol? Anna replies that she likes a drink, but not too often. After further probing, Anna goes on to say "all my friends drink, not sure about during their pregnancy though!". "After all, it's just normal now isn't it? I mean everyone goes out for a drink.

- What would you do as a midwife in this situation?
- What interventions would support you as a midwife, in this situation?

Vignette 2 – Emily (evidence and skills)

Patient Age:	30 years
Gestation:	15 weeks
Midwife Appointment:	Booking/antenatal
Parity:	0+0

Emily is attending the booking appointment. When taking Emily's alcohol history you find out that before pregnancy she was quite a heavy drinker; she went out most Fridays for after work (on average a bottle of wine and several cocktails) and Saturdays with friends (similar consumption to Fridays). She did not regularly drink throughout the week, but would have one or two large glasses of wine on one or several days of the week besides the weekend drinking. Emily says she stopped when she found out about the pregnancy, at 8 weeks, but has since on occasion still gone out with work. Several of her colleagues have suggested that "it's okay, one drink won't harm the baby!" Emily is unsure what the risks are and asks you about if there is a safe limit of drinking. She wants to continue to go out with her work colleagues but says she finds it hard to resist the pressure of not drinking.

- What would you do in this situation?
- What would be helpful in this scenario?
- What skills do you use as a midwife to have a health promoting conversation?

Vignette 3 - Susan (evidence)

Patient Age:	36 years
Gestation:	20 weeks
Midwife Appointment:	Booking/antenatal
Parity:	3+0

Susan is attending her booking appointment. You have asked her a number of questions related to lifestyle and she has answered them with some resistance and seems to not be fully engaged in the conversation. You ask her "What about alcohol, do you drink any alcohol now?" Susan replies in a very annoyed tone "Why are you asking me that question? Do I look like an alcoholic to you?" You are keen to calm the situation and decide to give Susan some rationale for why the question is

asked. You tell her that "This is a question we ask all women who come to antenatal care. We know that most women stop drinking during pregnancy, but some don't and might want some support". Susan is quiet for a moment and then says "Yeah, well no of course I don't".

- What would you do next in this situation?
- How would you feel in this situation?
- Do you normally provide a rationale to women for why you are asking the question?

Vignette 4 – Stella (pre-pregnancy drinking)

Patient Age:	24years
Gestation:	12 weeks
Midwife Appointment:	Booking/antenatal
Parity:	0+0

Stella is attending her booking appointment. She's a young woman, recently graduated from university and had just started her first job when she found out that she was pregnant. Because you know she's recently been to university, you feel that it would be good to talk about her drinking habits. You ask her if she's currently drinking, "No", she says. To explore further you ask her whether she drank at all before she found out she was pregnant, at week 7. She just says "No". You sense that she's not particularly interested in talking about it, but decide to probe a bit further. "What about before you got pregnant", you say, "how often did you drink then?". Stella says that obviously she drank a lot because she was at university and everyone drinks a lot.

- How do you feel about asking about pre-pregnancy drinking?
- How can you use pre-pregnancy drinking to discuss current drinking?

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