Midwifery 149 (2025) 104566

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw

Review Article

Healthcare professionals' prevention practices and perceptions of risk regarding alcohol consumption during pregnancy: A qualitative systematic review

Raphaël Hammer *, Elise Rapp, Adrien Bruno, Magali Serex

School of Health Sciences (Haute Ecole de Santé Vaud - HESAV), University of Applied Sciences and Arts Western Switzerland (HES-SO), 21, avenue de Beaumont, CH - 1011 Lausanne, Switzerland

A R T I C L E I N F O

Keywords:
Health personnel
Health Knowledge
Attitudes
Practice
Perceptions
Alcohol Drinking/prevention and control
Pregnancy
Qualitative research
Systematic review

A B S T R A C T

Background: While perinatal health professionals are pivotal in the prevention and reduction of alcohol consumption during pregnancy, some provide inconsistent recommendations and fail to engage in routine and effective alcohol use prevention strategies. This paper presents a systematic review of qualitative studies exploring the perception and practices of health professionals in relation to asking and advising pregnant women about alcohol consumption.
Design: A systematic literature search for peer-reviewed primary studies in seven electronic databases, from inception to December 2022, and a hand search strategy were employed to conduct a qualitative synthesis, without language restriction. The methodological quality of the included studies was assessed using the Critical Appraisal Skills Programme (CASP) tool. A thematic synthesis was employed to guide the synthesis of the data.
Findings: The review included 24 studies, and three themes were generated from the analysis: advising and screening practices of health professionals, approach to risk and challenges.
Discussion: The findings of this review demonstrate that healthcare professionals face clinical, relational and organisational challenges that may influence their commitment to addressing alcohol consumption among pregnant women. The health professionals' approach to screening and advising is also shaped by their subjective perceptions of alcohol-related issues and of patients at risk.
Key conclusions and implications for practice: Improving prevention practices requires developing continuing education on alcohol-related risks, providing tools for communicating in a sensitive and appropriate way, and making healthcare professionals aware of how their perceptions may influence their practices.

Introduction

The effects of prenatal exposure to alcohol encompass a broad spectrum of potential consequences for the health of the foetus and child. The most serious consequences, referred to as foetal alcohol syndrome (FAS), include a range of neurodevelopmental, behavioural, physical and morphological problems (Flak et al., 2014). In the absence of scientific evidence regarding a safe threshold for alcohol consumption, international recommendations advocate that women abstain completely from alcohol during pregnancy (NICE, 2008; WHO, 2014). If, as many studies have concluded, the majority of women abstain from alcohol after becoming aware of their pregnancy, it is estimated that, globally, more than one woman in ten continue to consume alcohol occasionally or in moderate amounts (Mårdby et al., 2017; Gosdin et al., 2022). Maternal drinking is still a major public health issue today and prevention remains a priority (Dozet et al., 2021; Scott & Sher, 2023). According to international guidelines, pregnant women should be adequately informed about any factors that may potentially impact their health and that of their infant, including the consumption of alcohol (NICE, 2008). However, despite the pivotal role of perinatal health professionals in preventing alcohol consumption (WHO, 2014), significant shortcomings have been identified (Oni et al., 2019; Dozet et al., 2021). The advice provided by healthcare professionals (HCPs) has been described as "sporadic" (Meurk et al., 2014) and "conflicting" (Anderson

* Corresponding author.
E-mail addresses: raphael.hammer@hesav.ch (R. Hammer), elise.rapp@hesav.ch (E. Rapp), adrien.bruno@hesav.ch (A. Bruno), magali.serex@hesav.ch (M. Serex).

https://doi.org/10.1016/j.midw.2025.104566
Received 19 September 2024; Received in revised form 15 March 2025; Accepted 8 August 2025
Available online 9 August 2025
0266-6138/© 2025 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

et al., 2014). In a recent survey, almost 10 % of the HCPs indicated that a "glass of beer or wine in moderation is OK for pregnant women" (Green et al., 2024). Insights from women's perspectives support findings from studies of the HCPs themselves, indicating, for instance, that HCPs do not consistently convey abstinence advice or information to pregnant women about the effects of alcohol (van der Wulp et al., 2013; Payne et al., 2014). Although it is not the primary reason for maternal drinking in pregnancy, dissatisfaction with the information received from their gynaecologist or midwife is often reported by pregnant women, as shown in the literature reviews published over the last few years (Lyall et al., 2021; Rockliffe et al., 2021; Hammer and Rapp, 2022; Popova et al., 2022; Pistone et al., 2024). Lack of information about the risk related to alcohol use during pregnancy among women of childbearing age may be related to "the scarcity of healthcare advice on this topic" (Corrales-Gutierrez et al., 2019: 12). Furthermore, pregnant women frequently encounter contradictory or inaccurate information regarding alcohol consumption from various sources, including HCPs, family members, the internet and mass media (Hocking et al., 2020; Hammer and Rapp, 2022; Harding et al., 2022). Several surveys of HCPs identified time constraints, lack of knowledge about the risk and lack of confidence to discuss alcohol as the main barriers (Wangberg, 2015; Chiodo et al., 2019; Smith et al., 2021; Olusanya et al., 2023). Consequently, further research on HCPs is needed to enhance the prevention of maternal alcohol consumption (Crawford-Williams et al., 2015b; Pehlke-Milde et al., 2022), and scholars called for qualitative investigations to better understand HCPs' attitudes (Green et al., 2024). It is of paramount importance to explore the perspective of HCPs, given that pregnant women regard them as a reliable source of information (Anderson et al., 2014; Meurk et al., 2014). Qualitative studies are best suited to gaining an in-depth understanding of the perspective of HCPs (Bradshaw et al., 2017), and qualitative literature syntheses are increasingly recognised as a valuable source of knowledge for healthcare providers and decision-makers. The mixed systematic review by Oni et al. (2019) addressed the barriers faced by HCPs when screening pregnant women for alcohol and illicit substance use. In their meta-ethnography, Dahl et al. (2023) focused on HCPs' experiences of screening and counselling pregnant women on alcohol consumption. Nevertheless, to the best of our knowledge, there is currently no qualitative systematic synthesis examining HCPs' perspectives regarding the provision of information to pregnant women while focusing on the risk of alcohol consumption. The aim of this qualitative systematic review is to gain a deeper understanding of the perspectives of HCPs regarding the risk and prevention of alcohol consumption during pregnancy.

Methods

Study design and search strategy

This qualitative systematic review employed the thematic synthesis method (Thomas and Harden, 2008) for the synthesis of primary qualitative studies and followed the ENTREQ reporting guidelines (Tong et al., 2012). The protocol for this review was prospectively registered on Prospero (CRD42023392897). The search strategies were designed in collaboration with a professional librarian (MS). To retrieve eligible studies, seven electronic databases were searched (PubMed, Embase, CINHAL, PsycINFO, IBSS, Web of Science and LILACS) from inception to December 2022, using keywords, Boolean operators, truncation symbols and index terms. No restrictions regarding language, geographical location or date were applied. The search was complemented by hand searching reference lists and the use of Google Scholar. The full search terms used for the databases and Google Scholar are shown in Supplementary File 1 (S1). One article published after the search period was added to the corpus (Dyson et al., 2023). The initial objective of the literature review was to include the perspective of HCPs during the breastfeeding phase too. However, due to the limited number of articles identified through the study selection it was decided to narrow the focus of the review to the pregnancy phase.

Eligibility criteria

The participants included in this review were defined as any professional engaged in the provision of information regarding the risks associated with alcohol consumption during pregnancy. This definition typically includes gynaecologists, midwives, nurses, general practitioners and other allied care professionals who provide care to women during the prenatal period in various settings, such as primary care, community and maternity health services. The review excluded studies focussing on HCPs working in the capacity of health policymakers, managers or those involved in the provision of specialized care to women with a diagnosed alcohol use disorder. Additionally, studies focussing on HCPs' opinions about health policy, official recommendations, interventions and programme implementation unrelated to their own professional practice were excluded. Studies were included if they reported on primary empirical research published in peer-reviewed journals that used qualitative methods for both data collection and analysis. Responses to open-ended survey questions were therefore excluded. Mixed-methods studies were eligible for inclusion provided that the qualitative findings could be clearly extracted from the quantitative findings. Similarly, studies were excluded if the findings pertaining to alcohol could not be distinguished from those concerning other substances, and if the findings regarding HCPs could not be differentiated from those related to other participants.

Study selection

The citations retrieved from the databases were saved into Endnote® (version EN20) and screened for duplicates by MS, who then uploaded the remaining records into Rayyan and checked again for duplicates. Two reviewers independently screened the titles and abstracts of all retrieved papers for eligibility and then independently assessed the full text of potentially relevant studies for final inclusion in the review. Any discrepancies that arose at each stage of the study selection process were resolved through discussion among the reviewers.

Quality appraisal

The methodological quality of the papers included in the review was assessed using the Critical Appraisal Skills Programme (CASP, 2017) checklist. At least two members of the review team evaluated the papers independently, and any discrepancies in the CASP ratings were resolved through discussion.

Data extraction and synthesis

As a first step of thematic synthesis (Thomas and Harden, 2008), two reviewers independently extracted all relevant findings relating to HCPs' perspectives from the Results and Discussion sections of each study report. In this review, findings were defined as second-order constructs, which refer to the primary study authors' verbatim interpretations or descriptions of participants' accounts (Malpass et al., 2009). Findings pertaining to participants who did not meet the inclusion criteria, such as pregnant women, were not extracted. Studies published in languages other than English or French were translated using the DeepL translation platform. In the second step, in accordance with the approach described by Thomas and Harden (2008), two reviewers coded inductively the study findings, which were entered into a Word table. They then developed independent initial listings of codes. Following discussion, a total of 128 initial codes were created. To identify similarities and differences, the initial codes were compared, refined and grouped, resulting in a list of 8 descriptive themes. As a third step in the thematic synthesis approach—which involved "going beyond" the original findings from the primary studies—three analytical

themes were created to capture the perspectives of HCPs in providing information and advice about alcohol consumption to pregnant women. It must be noted that the primary studies addressed a range of topics with a variety of objectives, such as examining “attitudes”, “perceptions”, “experiences” and “views”, as well as “beliefs” or “opinions” of HCPs. However, these terms were most often used without clear definition or distinction. For the purpose of this review, following an interpretative approach, which focuses on how people understand the world (Daher et al., 2017; Green & Thorogood, 2004), we have drawn on the basic distinction between the findings referring to perceptions and to practices. “Perceptions” refer to how HCPs’ make sense, based on their past experience, of their professional role and the issue of drinking in pregnancy, while “practices” refer to what HCPs reported or described they do, whether in clinical or communication terms. At each stage of the thematic synthesis, a minimum of two reviewers participated in discussions concerning the generation and definition of codes and themes. Any discrepancies were resolved by consensus.

Findings

Study selection

The search in the databases yielded 1,464 records. After the exclusion of duplicates, 783 records were screened on title and abstract against the inclusion criteria (see the PRISMA flow diagram in Fig. 1). A total of 712 records were excluded, resulting in the retrieval and eligibility assessment of the full texts of 71 reports. Subsequently, 46 papers were excluded, primarily due to the impossibility of distinguishing between findings pertaining to alcohol and those concerning other products, such as illicit substances or tobacco. Other papers were ineligible for reasons related to study design, aim of the study and participants’ profile. Of the records identified through hand searching and Google Scholar, three reports (Charro Baena et al., 2019; Coulomb et al., 2019; Dyson et al., 2023) were deemed eligible for inclusion in the review. Finally, a total of 25 studies were identified. As only one of these addressed the HCPs’ perspective in providing information about alcohol consumption during breastfeeding (Giglia & Reibel, 2019), that study was excluded. Twenty-four papers were thus selected for inclusion in the review. For the sake of clarity, references to the papers are indicated in superscript and numbered in accordance with Tables 1 and 2.

Characteristics of included studies

The 24 papers reported findings from 22 qualitative studies published between 1989 and 2023 and conducted mostly in Europe, North America and Australia (see Table 1). A total of 601 professional participants were involved in the 22 studies. Two studies were published in French and one in Spanish. Fourteen studies focused exclusively on the perspectives of HCPs, while eight studies additionally incorporated other participants, predominantly pregnant women or recently postpartum women. In seven studies, the HCP participants were exclusively midwives, while in one study they were exclusively physicians. All other samples included a range of professionals engaged in the care of pregnant women—predominantly physicians, midwives and nurses—who were concerned with the issue of maternal alcohol consumption. The majority of the studies used individual interviews (n = 13), while others employed focus groups (n = 4) or a combination of both data collection techniques (n = 5). Thematic analysis was applied in the majority of the papers.

Results of quality appraisal

All 24 studies scored the CASP questions as being of overall good quality, with the majority demonstrating partial or full satisfaction with

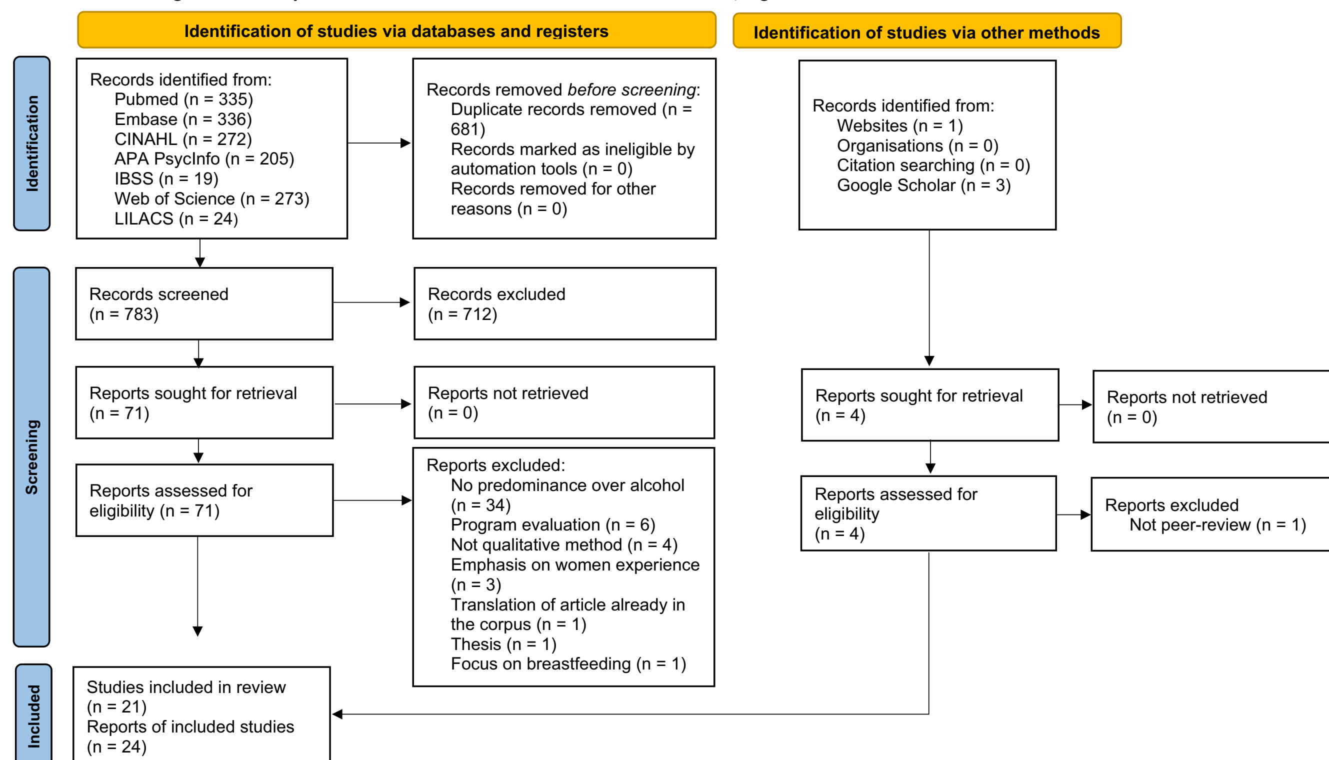

Fig. 1. Prisma flow diagram.

Table 1
Characteristics of included studies (n = 24).

Authors, year, country	Sample	Data collection and data analysis	Characteristics of HCP participants
1. Bagley and Badry (2019) New Zealand	34 health and social professionals	- Semi-structured interviews (face to face or by phone) - Inductive thematic analysis	Paediatricians, psychiatrists, social workers, neuropsychologists, psychologists, speech language therapists, public health nurses, youth workers, mental health nurses, counsellors, family support workers, child protection workers and public health professionals
2. Balachova et al. (2007) Russia	23 physicians (and 23 women and 5 partners)	- Focus groups - Thematic analysis	Paediatricians (6), obstetrician-gynaecologists (11) and physicians providing substance abuse treatment to women (6); predominantly female, with 2 to 30 years of clinical experience
3. Brems et al. (2010) USA	26 health or allied health professionals	- Semi-structured interviews (face to face or by phone) - Qualitative data coding based on grounded theory	23 women and 3 men (mean age of 47 years and average of 19.2 years of professional experience) representing medicine, nursing, psychology, social work, occupational therapy, physical therapy, speech and language pathology, substance abuse treatment and consumer advocacy
4. Charro Baena et al. (2019) Spain	24 health professionals	- Semi-structured interviews by phone - Categorical and interpretative content analysis	Obstetrician-gynaecologists, midwives and nurses; predominantly female (19 women), aged 23–60 years, with 6 months to 25 years of experience in their speciality
5. Coons et al. (2017a) Canada	21 health care students	- Semi-structured interviews (face to face, by phone or via Skype), including a scenario-based vignette - Thematic analysis approach	Medicine students (7), midwifery students (8) and nurse practitioner students (6)
6. Coons et al. (2017b) Canada	21 health care students (same sample as Coons et al. [2017a])	(same as Coons et al. [2017a])	(same as Coons et al. [2017a])
7. Coulomb et al. (2019) France	92 health care providers	- Semi-directive interviews (mainly face to face) - Thematic content analysis	17 general practitioners (7 women and 10 men aged 35–67 years) and 75 independent midwives
8. Crawford-Williams et al. (2015a) Australia	10 health professionals	- Semi-structured interviews - Thematic analysis	4 midwives, 3 GPs, and 3 obstetricians aged 27–62 years
9. Doi et al. (2014) Scotland	21 midwives	- Semi-structured interviews with 15 midwives; one focus group with 6 midwifery team leaders - Thematic analysis	Aged 24–56 years, between 3 and 33 years of midwifery practice
10. Dumas et al. (2006) France	15 obstetricians and midwives	- Semi-directive interviews - Qualitative content analysis	Not reported
11. Dyson et al. (2023) UK	14 midwives (and 6 service users)	- Structured Zoom-based focus group interviews - Thematic analysis	Not reported
12. France et al. (2010) Australia	53 health professionals	- 5 focus groups and 19 in-depth interviews - Thematic analysis	Aboriginal health workers (17), allied health professionals (10), community nurses (14) and physicians (7 general practitioners, 2 obstetricians and 3 paediatricians)
13. Hernandez and Calarco (2021) USA	First-time pregnant individuals (40) and their health care providers (14)	- In-depth interviews - Inductive thematic analysis	Obstetrician-gynaecologists (6), certified nurse midwives (6) and registered nurses (2)
14. Herzig et al. (2006) USA	49 health providers	- Focus groups - Interpretive approach, combined with the "Five A's" framework	Obstetrician-gynaecologists (40), certified nurse midwives (5), nurse practitioners (3) and registered nurse (1) ranging in age from 26 to 74 years
15. Jones et al. (2011) Australia	12 midwives (and 12 pregnant women)	- Face-to-face semi-structured interviews - Thematic analysis	Average of 10 years in the role; average age of 42 years
16. Jones and Telenta (2012) Australia	12 midwives (and 12 pregnant women) (same sample as Jones et al. [2011])	(same as Jones et al. [2011])	(same as Jones et al. [2011])
17. Loxton et al. (2013) Australia	14 service providers (and 74 mothers of young children)	- Focus groups (semi-structured interviews with mothers) - Thematic analysis	Mainly nursing, midwifery, social work and health work; most were women (n = 11); professional experience ranged from 1 to 31 years
18. Miner et al. (1996) USA	71 health care providers and 41 key informant health care professionals	- Focus groups (with health care providers) and interviews by phone or face to face (with key informant health care providers) - Not specified	Mostly physicians, nurses and midwives
19. Morrello et al. (2022) UK	6 midwives	- Semi-structured interviews - Framework analysis	Worked as midwives between 15 months and 28 years
20. Plaisier (1989) USA	6 health care workers (and 29 childbearing American Indian women)	- Interviews - Not specified	Predominantly female and American Indian
21. Schölin et al. (2019) England and Sweden	16 midwives	- Semi-structured interviews - Thematic analysis	Age ranged from 32 to 62 years; years of professional experience ranged from 1.5 to 38 years
22. Schölin et al. (2021) UK	22 midwives	- 2 focus groups and 11 individual interviews - Thematic analysis	4 had less than 10 years of experience, 5 between 10 and 20, 10 between 21 and 30 and 3 more than 30
23. Ujhelyi Gomez et al. (2022) England	7 healthcare professionals (and 6 pregnant women and 8 mothers)	- One focus group and individual interviews - Content analysis and reflexive thematic analysis	3 midwives (aged between 26 and 39 years), 3 GPs (aged more than 40 years) and 1 substance use worker (aged less than 25 years), mostly women of white ethnic background
24. van der Wulp et al. (2013) Netherlands	10 midwives (and 25 pregnant women and 9 partners)	- Semi-structured interviews (face to face and by phone) - Qualitative content analysis	Predominantly female; aged 27 to 49 years; average of 9 years of professional experience

Table 2
Analytical themes and related subthemes identified in the included studies.

Analytical themes and subthemes	Advising and screening practices			Risk approach			Challenges	
	Conveying the abstinence message	Informing women about the risk	Screening for alcohol use	Endorsing or questioning the abstinence message	A risk perceived as unlikely	Perception of women at-risk and risky drinking	Challenges in practice	Alcohol as a social problem
1. Bagley & Badry (2019)			X	X		X	X	X
2. Balachova et al. (2007)				X	X		X	X
3. Brems et al. (2010)		X			X		X	
4. Charro Baena et al. (2019)	X	X	X	X	X		X	X
5. Coons et al. (2017a)	X		X	X	X	X	X	X
6. Coons et al. (2017b)	X	X		X			X	
7. Coulomb et al. (2019)		X	X	X	X	X	X	
8. Crawford-Williams et al. (2015a)		X	X	X	X	X	X	X
9. Doi et al. (2014)	X			X	X	X	X	X
10. Dumas et al. (2006)		X	X		X	X	X	
11. Dyson et al. (2023)							X	
12. France et al. (2010)			X	X	X	X	X	
13. Hernandez & Calarco (2021)	X	X		X				
14. Herzig et al. (2006)	X	X	X	X			X	X
15. Jones et al. (2011)	X	X	X	X	X	X	X	
16. Jones & Telenta (2012)				X			X	X
17. Loxton et al. (2013)		X				X	X	X
18. Miner et al. (1996)	X		X			X	X	
19. Morrello et al. (2022)	X	X	X	X	X		X	
20. Plaisier (1989)			X				X	
21. Schölin et al. (2019)	X	X	X	X	X	X	X	X
22. Schölin et al. (2021)	X	X	X	X	X		X	
23. Ujhelyi Gomez et al. (2022)	X			X	X	X	X	X
24. van der Wulp et al. (2013)	X	X	X	X	X		X	

the criteria. One study met all criteria as fully or mostly satisfied[19] (see Supplementary File S2 for details). However, more than one out of two studies failed to address the relationship between the researcher and the participants. Furthermore, the criteria pertaining to the research design and data analysis process were only partially satisfied in eight studies.

Synthesis of qualitative findings

Table 2 presents the studies that contributed to each analytical theme and its associated subthemes.

Theme 1: Advising and screening practices of healthcare professionals

This theme highlights HCPs' reported practices, which were addressed predominantly in terms of the message conveyed to women, screening for drinking behaviour, and the provision of information.

Conveying the abstinence message

Participants typically advised women that abstinence from alcohol during pregnancy is the best option[4,9,15,19,21-24]. However, several studies also revealed that the abstinence message was not consistently conveyed[4-6,14,18,22], with some HCPs reporting transmitting the message that light drinking may be acceptable[4,13].

Informing women about risk

Most participants reported advising women about the risk of alcohol consumption for preventive purposes. This involved, for instance, explaining the consequences of drinking[4], adapting the information to women's needs[19,22], communicating the uncertainty related to the effects of light or moderate drinking[22], or providing written informational material[24]. Nevertheless, a proportion of HCPs did not routinely provide information regarding the associated risks[6-8,10]. Some were likely to convey general or elementary information regarding alcohol consumption or to merely deliver the "do not drink" message rather than engaging with women in a detailed discussion of the risks[4,7,13,15,24]. Several studies revealed that some HCPs offered no advice at all or simply did not address the subject again when discussing alcohol use with women who had disclosed being abstinent[15,21,24]. Studies also highlighted deficiencies in the provision of information and counselling and referred to participants not being fully committed to their responsibility of tackling the topic[3,4,14,17,19,24].

Screening for alcohol use

A variety of screening practices for alcohol consumption were

identified in several studies. Most participants felt fully committed to addressing the risk of drinking[14,15,20] and reported routinely inquiring about their patients' drinking behaviour at the initial consultation[4,7,12,15,18,24] or more than once throughout the pregnancy[19]. To encourage truthful disclosure and normalise screening, HCPs reported employing strategies such as incorporating routine questions or screening tools[19,21], "putting questions about alcohol consumption into a context of everyday behavior", or asking "how much alcohol do you drink?" rather than "do you drink alcohol?"[12]. Exploring drinking behaviour prior to pregnancy[5,15,22] and understanding the social context of alcohol consumption[22] were occasionally regarded as integral components of the screening process.

Furthermore, studies found that some participants were unlikely to screen women systematically[4,7,8,12,20] or reported screening them only once at their initial visit[4,8,14,15]. Some studies noted that HCPs paid little or no attention to occasional alcohol consumption in social settings[4], overlooked the "significance of pre-pregnancy drinking"[19] and disregarded the woman's partner in their screening approach[22,24]. The utilisation of a screening tool was reported as being uncommon[7,10], with some participants favouring observation based on behaviours, physical appearance or their personal knowledge of the women. Lesser involvement in the issue of alcohol was related to the perception that other risks, such as illicit drug use[1] or tobacco consumption[4,8,12] were of greater concern.

Theme 2: Risk approach

This theme encompasses several aspects of HCPs' perceptions of the "alcohol and pregnancy" risk within the context of their everyday professional practice.

Endorsing or questioning the abstinence message

In the majority of studies, participants recognised the harmful effects of alcohol consumption and generally expressed support for the recommendation that pregnant women should abstain from alcohol[1,2,5,6,9,13,15,16,19,21-23]. However, disagreements regarding the relevance of the strict abstinence message revolved mostly around the risk according to the stage of pregnancy[6,8,9] and the potential harms of low to moderate alcohol consumption[5,6,9,14,23,24]. A permissive stance towards occasional drinking or small amounts of alcohol was frequently reported[4,6,7,9,12,21,24], with some participants considering that an occasional glass of wine was unlikely to do harm[8]. Therefore, there was no consensus among participants that any amount of alcohol can be harmful and that a zero-tolerance message should be universally conveyed.

A risk perceived as unlikely

This subtheme concerns the salience with which HCPs perceived in their daily practice the issue of pregnant women drinking. A common finding was that the participants did not anticipate encountering this risk, as they assumed that the majority of their women patients already knew the abstinence message and would cease alcohol consumption as soon as they became aware of their pregnancy[2,4,7-9,12,19,21]. Some participants perceived alcohol consumption among their pregnant patients as "uncommon"[21] or "a very small problem"[12]. Consequently, a number of HCPs felt that the "alcohol / pregnancy" issue was not a direct concern for them[3,7,9,10]. Such an assumption may result from participants' lack of clinical experience with the risk, as they reported having encountered in their practice only rarely, if ever, cases of FAS[7,8]. Nevertheless, some participants also indicated that some pregnant women may consume alcohol for social or health-related problems[2,5,7,8,12,16,21,23] and that their disclosures may not be truthful or accurate[4,9,10,19,21,22,24].

Perception of women at-risk and risky drinking

This subtheme refers to the ways in which participants perceived the risk in social and epidemiological terms. Some studies indicated that the risk of prenatal alcohol use was often perceived as being closely associated with the social characteristics of pregnant women. Women from disadvantaged socioeconomic backgrounds[1,5,7] or those belonging to specific ethnic communities[5,12] were seen to be more affected than other women with the issue of drinking during pregnancy. In reference to the stereotype associating drinking during pregnancy with alcoholism, and alcoholism with the underprivileged classes, some authors critically described these perceptions as "a biased representation of their patients"[7] or "selection bias for women at risk"[10].

Perception of the "alcohol / pregnancy" issue was also frequently influenced by participants' focus on high-risk situations—namely, heavy alcohol consumption during pregnancy[5,7,12,17] or teenage pregnancies and binge drinking[15]. This particular focus on heavy consumption and high-risk individuals[23] was criticised by some authors, as it may lead HCPs "to underestimate the risk of alcohol among their patients"[7] or to "conceal" the adverse effects of low to moderate alcohol intake[10]. Furthermore, several studies indicated that participants were influenced by various "non-clinical factors", including personal attitudes and social norms surrounding alcohol consumption[1,5,8,17,18,21]. For example, Coulomb et al. (2019) referred critically to HCPs' "lay perception of risk", which can result in "underestimating" the risk. Additionally, the personal experiences of HCPs with regard to alcohol consumption may influence the advice they provide to women[1,9].

Theme 3: Challenges

Challenges in practice

Most participants were described as knowledgeable of the risk[2] including knowledge of FASD/FAS[3,17,20,24] and the consequences of alcohol consumption during pregnancy[4,8,9,19,23]. Most were aware of the official recommendations[8,19], and reported that they had the skills to provide information to pregnant women about the topic of alcohol and to advise them to abstain[19,21,22,24]. Nevertheless, three categories of challenges were identified for a number of HCPs in addressing the topic with women, advising them or screening them for alcohol consumption.

First, the category *clinical* challenges describes the difficulties HCPs' faced in relation to the risk as a medical concept, particularly due to gaps in their knowledge and skills regarding the effects associated with antenatal alcohol exposure[15,16,20,24], including FAS or FASD[1-4,6,8,10,12]. Participants reported a lack of training and resources about the topic[11,12,17]. Some HCPs were unsure about the official guidelines[4,8,15,17,24], screening tools[18], diagnosis guidelines[1,2], and advice guidelines for pregnant women consuming alcohol[1,2,12,19]. The clinical challenges in conveying clear guidance also related to the participants' difficulty in defining precisely the risk[1,14], including the threshold for alcohol consumption[5,6], the lack of solid evidence regarding the effects of low to moderate alcohol consumption[6,15,17], and situations of drinking before pregnancy awareness[6,7,19,21,22,24]. It was also found that some participants lacked knowledge regarding referral or intervention pathways when encountering pregnant women who are not abstinent[3,4,17]. The impact of lack of skills and/or knowledge on clinical practices was described in a few studies[3,12,18]. For instance, lack of knowledge about the risk was "a reason to discuss alcohol only shortly"[24] for some midwives, or contributed to some HCPs' "disinclination to talk with pregnant women about alcohol use during pregnancy"[17].

Second, *relational* challenges referred to alcohol during pregnancy perceived as a sensitive, emotive or taboo subject[1,4,7,9,12,19,21], which made communication on the topic challenging. While participants indicated that it might be difficult for pregnant women to talk about alcohol consumption[1,9,17-19,22], they also frequently reported discomfort in asking them about drinking[4,7,10,20]. A lack of specific communication

skills for sensitively addressing the subject of alcohol and for individualising advice was observed in several studies[4,6,11,17,21]. Consequently, a recurrent reported barrier was the fear of appearing judgmental or causing undue anxiety[4,7,11,12,15,19,20], unintentionally causing stigma[1] or "offending or losing the patient"[3]. The issue of how to respond to non-truthful disclosure of alcohol use arose as an additional challenge[11,14,17,19,22,24]. In this context, many HCPs valued building a positive relationship with pregnant women. In particular, they emphasised empathy, trust and non-judgmental attitudes as crucial for broaching the topic of alcohol[1,4,9,12,19,21,22]. While some participants focussed on open communication as a means of avoiding the stigma associated with alcohol consumption[11,12,22], others highlighted caring communication as central, especially to reassure and not make women feel guilty about having consumed some alcohol, whether intentionally or inadvertently[7,14,15,19,21].

Third, *organisational* challenges also had an impact on HCPs. Evidence from several studies indicated that lack of consultation time was the primary obstacle in initiating discussion with women on the subject[2,4,8,9,12,15,18,21,22], resulting in some participants placing less emphasis on specific aspects of antenatal care[4,8]. Furthermore, the perception of limited availability of specialised resources[3,20], lack of referral options for pregnant women who consume alcohol, and lack of confidence in the efficacy of specialised clinics or alcohol counsellors[12,18] were also reported as difficulties.

Alcohol as a social problem

Some participants depicted alcohol use first as a societal issue, frequently referring to the cultural acceptance of alcohol consumption and the social minimisation of the issue of occasional drinking during pregnancy[1,5,8,14,16,17,23]. The drinking culture was identified as contributing to the dissemination of contradictory information regarding the effects of alcohol exposure, potentially interfering with the prevention of prenatal alcohol consumption[1,16,21]. HCPs also highlighted the dearth of public health prevention campaigns[1,2] and the scant attention paid to the subject of alcohol in antenatal courses and preconception consultations[4,8,9].

Discussion

This qualitative systematic review offers a comprehensive account of HCPs' perceptions and practices with the prevention of alcohol consumption during pregnancy. Thematic synthesis identified three principal themes from 24 papers, predominantly representing the perspectives of midwives and gynaecologists-obstetricians.

The first significant finding is that prevention practices reported by the HCPs were in accordance with official guidelines. Most of participants indicated that they routinely asked about alcohol consumption, provided information to pregnant women, and recommended to abstain from drinking. This finding is supported by surveys, which found that the majority of HCPs were committed to addressing the risk in their practice by screening pregnant women for alcohol consumption and advising them to abstain (Payne et al., 2014; Wangberg, 2015; Lemola et al., 2020; Green et al., 2024). However, some participants in our review did not inquire about alcohol consumption and perceived low-level drinking as acceptable. This is consistent with other studies showing that a number of HCPs do not routinely ask about alcohol use in pregnancy and/or provide information on the risk (Payne et al., 2005; Chiodo et al., 2019; Olusanya et al., 2023; Green et al., 2024). Our review reveals a variety of advising practices among HCPs, ranging from addressing the topic once at the initial pregnancy booking to providing information regularly throughout the pregnancy. It also highlights various screening practices, in terms of using or not using screening tools, ways of asking the question, or strategies aiming at normalizing the topic and encouraging truthful disclosure of alcohol consumption.

The second key finding demonstrates that the practices of HCPs were shaped by a range of factors, offering insights into the reasons why some HCPs may not practise in accordance with official guidelines. In particular, our review highlights the importance of exploring HCPs' perceptions related to alcohol consumption during pregnancy as they influence their clinical practices. For example, the discrepancy in screening strategies and recommendations conveyed to pregnant women may be attributed to differences in HCPs perceptions of the risks associated with small amounts of alcohol and the prioritisation of other prenatal risks. This is consistent with the findings of Chiodo et al. (2019), who observed that HCPs who believe that occasional alcohol consumption is acceptable may be less inclined to screen pregnant women. Furthermore, our review indicates that alcohol was often perceived as an *intangible risk*, with HCPs reporting that they did not encounter—or expect to encounter—women drinking while pregnant and/or being at higher risk of FASD or FAS (see also Dahl et al., 2023). Consequently, they may feel relatively unconcerned about the issue. In addition, HCPs tend to perceive the risk of alcohol consumption during pregnancy through the lens of heavy drinking patterns or the figure of the alcohol-dependent woman. They may thus fail to recognise the risks associated with low to moderate drinking. The significance of HCPs' perceptions of risk was also evident in studies showing that some of their screening or advising practices were based on pregnant women's social characteristics or cultural background. Our review thus demonstrates that HCPs' daily work is shaped by their subjective perceptions of risk and patients, which are partly mediated by the social and organisational context, as shown in other studies on HCPs' judgements (Kirk et al., 2014; Green et al. 2024).

The third key finding lies in the identification of significant challenges that HCPs may encounter in practice. The *organisational* challenges partly echo barriers or contextual factors previously reported, such as time constraints and workload (Wangberg, 2015; Oni et al., 2019; Oni et al. 2020; Olusanya et al., 2023). This review in particular highlighted *clinical* and *relational* challenges. The clinical challenges indicate that a proportion of the HCPs lacked the requisite knowledge related to the risk of drinking in pregnancy, including screening skills and official guidelines. Surveys also found that insufficient training and lack of knowledge about FAS or screening tools (Olusanya et al., 2023) were common among HCPs (Howlett et al., 2019; McCormack et al., 2022). However, it must be noted that most participants in the primary studies included in our review demonstrated knowledge of the risk or adequate skills. The relational challenges highlight the perception of alcohol consumption during pregnancy as a social taboo. Fear of alienating women expressed by some HCPs was identified as a significant barrier to addressing the risk, as observed in other studies (Leruste et al., 2023). The perceived sensitivity of the topic prompted other HCPs to emphasise the importance of caring communication, based on the establishment of trust and the normalisation of conversations about alcohol, as a means of facilitating honest disclosure of alcohol consumption (see also Dahl et al., 2023). Communication and interpersonal relationship have been stressed as the key values for influencing behaviour change in pregnancy (Talbot et al., 2024). Oni et al. (2020) suggest that the impact of fear of offending pregnant patients on the relationship may in fact be overestimated by HCPs. Indeed, surveys of pregnant women indicated that most of them did not feel discomfort at being asked questions about alcohol use (Chiodo et al., 2019). More broadly, the challenges found in our review reflect several individual and structural components of the Theoretical Domains Framework, which aims to identify relevant facilitators of and barriers to behaviour change (Atkins et al., 2017).

Recommendations

Our findings provide a basis for recommendations for practice. Our review indicates that a lack of knowledge and an insufficient level of self-confidence in screening and advising pregnant women can have an impact on the clinical practices of HCPs. This finding is consistent with

those of Dozet et al. (2021), Oni et al. (2019) and Dahl's et al. (2023), showing that a lack of knowledge and communication skills may contribute to some HCPs' reluctance or discomfort in addressing the risk of alcohol use during pregnancy. Given that pregnant women are often exposed to inadequate information from various channels, including HCPs (Hocking et al., 2020; Hammer and Rapp, 2022), it is of the utmost importance that women receive consistent advice that is in alignment with official guidelines (Olusanya et al., 2021). Consequently, the necessity for enhanced training in various areas for HCPs has been emphasised, including better understanding of FASD/FAS and specific competencies for addressing the topic of alcohol in an open manner (Howlett et al., 2019; Dozet et al., 2021; Ujhelyi Gomez et al., 2022; Leruste et al., 2023). Training programmes should include modules on techniques for communicating risks and scientific uncertainty (Doi et al., 2014; Morrello et al., 2022). To facilitate open discussion about alcohol consumption without fear of judgement, programmes should also include modules on effective screening practices (Wangberg, 2015; Coons et al., 2017a) while taking into account the specific needs of pregnant women. The creation of cost-free and accessible massive open online courses represents a promising avenue for the continuing training of perinatal professionals (CDC, 2024).

While enhancing the knowledge and screening abilities of HCPs is undoubtedly a crucial step, it may not be a standalone solution. Recommendations for improving prevention practices should also address the communication issue, and consider how the social context shapes women's experiences of alcohol during pregnancy and HCPs' own perceptions of alcohol as a risk. To destigmatise the issue of alcohol consumption during pregnancy, this topic should be discussed as early as possible and at every antenatal consultation (WHO, 2014). Further, these discussions should follow a continuity of care model, which has been described as an enabling factor for prevention (WHO, 2016; Dyson et al., 2023; Sandall et al., 2024). Along with empathic and supportive care (Edwards et al., 2020), this approach allows for the more effective identification of women who may be at risk, thereby facilitating the delivery of interventions at an earlier stage. In addition, to limit the influence of HCPs' social perceptions of risk it may be beneficial to first make professionals aware of such biases and their possible impact on practices. Furthermore, it is strongly advised that a universal screening approach be adopted whereby every pregnant woman is regarded as potentially at risk (Plaisier, 1989; France et al., 2010; Coons et al., 2017a). To provide the most appropriate advice and support, it is also crucial that HCPs engage in open conversation with their patients (Schölin et al., 2021) to gain an understanding of their social and cultural context, the possible motives underlying their alcohol consumption and their difficulties in abstaining from alcohol (Gouilhers et al., 2019). Person-centred communication and relational skills, including motivational interviewing and an engagement in active listening (Ferguson, 2021), should thus be integrated into the training of perinatal professionals. It is also incumbent upon HCPs to be confident in investigating women's drinking habits prior to pregnancy, as well as the role of the partner, who may exert influence over the woman's abstinence in a number of ways (Hammer, 2019).

Strengths and limitations

A strength of this review lies in its focus, without language restrictions in the search literature, on HCPs' perspective regarding alcohol and pregnancy, including their perceptions of risk and the challenges encountered. Furthermore, the research team comprised experts in qualitative research and complementary professional backgrounds (social sciences, nursing and midwifery). It is important to note that the evaluative findings on HCPs' knowledge, skills and practices, as reported in our review, should not be taken as objective assessments and may not have the same meaning across different studies. Our synthesis should also be interpreted in light of the potential biases of selection and/or social desirability reported in several primary studies. The inclusion in our review of studies dating back more than 10 years is another potential limitation insofar as recent changes in official policy and guidelines may have occurred, making HCPs more aware of the importance of the risk of alcohol consumption and of the abstinence message in pregnancy. In this respect, more longitudinal studies or comparative analyses are needed (for example Kesmodel and Kesmodel (2011), and Green et al. (2021)). Finally, as noted above, the lack of conceptual specificity regarding the objectives in the primary studies presented a challenge in the data synthesis.

Conclusion

The objective of this qualitative synthesis was to better understand the perspectives of HCPs regarding alcohol consumption during pregnancy. While most HCPs endorsed the abstinence message and were committed to preventing this risk, some were not inclined to routinely screen and advise their patients about alcohol use. Empathy, trust and a non-judgemental approach were seen as effective methods for addressing the topic with pregnant women. However, participants frequently faced clinical, relational and organisational challenges in their practice. Furthermore, this review indicates that HCPs' practices are influenced by their knowledge and self-confidence in initiating discussions on the topic, as well as by their perceptions of patients at risk and alcohol consumption. Professional training should focus on scientific knowledge, communication skills and an awareness of the social and subjective influences on HCPs' practices.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used DeeplWrite, Deepl.com and ChatGPT 4o in order to improve the language and grammar, as the authors are not native English speakers. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

Ethical approval

Not applicable.

Statement of significance

Problem	What is Already Known	What this Paper Adds
Perinatal healthcare professionals play a pivotal role in preventing alcohol consumption. However, some do not consistently convey abstinence advice to pregnant women.	Time constraints, lack of knowledge and lack of confidence are the main barriers encountered by healthcare professionals.	This qualitative review offers insights into the reasons why some healthcare professionals may not practise in accordance with official guidelines. Their approach to screening and advising pregnant women is shaped by perceived level of skills, and subjective perceptions of risk and patients' social characteristics. Moreover, clinical, relational and organisational challenges influence healthcare professionals' commitment to addressing alcohol consumption among pregnant women.

Funding sources

This research was supported by the School of Health Sciences (HESAV), University of Applied Sciences and Arts Western Switzerland

(HES-SO), and by the Faculty of Health Sciences from the University of Applied Sciences and Arts Western Switzerland (HES-SO) [grant number 125172], awarded to Elise Rapp (main applicant) and Raphaël Hammer (co-applicant).

CRediT authorship contribution statement

Raphaël Hammer: Writing – review & editing, Supervision, Funding acquisition, Conceptualization, Writing – original draft, Investigation, Formal analysis, Project administration. **Elise Rapp:** Investigation, Project administration, Funding acquisition, Conceptualization, Writing – original draft, Formal analysis, Writing – review & editing, Data curation. **Adrien Bruno:** Formal analysis, Writing – review & editing, Writing – original draft. **Magali Serex:** Data curation, Methodology, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We are grateful to the following institutions for their financial support: the School of Health Sciences (Haute Ecole de Santé - Vaud), University of Applied Sciences and Arts Western Switzerland (HES-SO), and the Health Sciences Faculty from the University of Applied Sciences and Arts Western Switzerland (HES-SO).

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2025.104566.

References

Anderson, A.E., Hure, A.J., Kay-Lambkin, F.J., Loxton, D.J., 2014. Women's perceptions of information about alcohol use during pregnancy: a qualitative study. BMC. Public Health 14, 1–10.
Atkins, L., Francis, J., Islam, R., O'Connor, D., Patey, A., Ivers, N., Michie, S., 2017. A guide to using the theoretical domains framework of behaviour change to investigate implementation problems. Implement. Sci. 12, 1–18.
Bagley, K., Badry, D., 2019. How personal perspectives shape health professionals' perceptions of fetal alcohol spectrum disorder and risk. Int. J. Environ. Res. Public health 16 (11), 1936.
Balachova, T.N., Bonner, B.L., Isurina, G.L., Tsvetkova, L.A., 2007. Use of focus groups in developing FAS/FASD prevention in Russia. Subst. use misuse 42 (5), 881–894.
Bradshaw, C., Atkinson, S., Doody, O., 2017. Employing a qualitative description approach in health care research. Glob. Qual. Nurs. Res. 4, 2333393617742282.
Brems, C., Boschma-Wynn, R.V., Dewane, S.L., Edwards, A.E., Robinson, R.V., 2010. Training needs of healthcare providers related to centers for disease control and prevention core competencies for fetal alcohol spectrum disorders. J. Popul. Ther. Clin. Pharmacol. 17 (3).
CASP, 2017. Critical appraisal skills programme—CASP (Qualitative Research) checklist. Available from: http://www.casp-uk.net/casp-tools-checklists. Accessed October 19, 2017.
CDC, 2024. Online Trainings and Resources. Alcohol and Pregnancy. https://www.cdc.gov/alcohol-pregnancy/hcp/communication-resources/index.html.
Charro Baena, M.B., Rivas Oliveira, A., Xavier, M.R., 2019. Embarazo y alcohol: conocimientos, actitudes y opiniones de los profesionales sanitarios. Health Addctn. – Salud Drog. 19 (2), 78–90.
Chiodo, L.M., Cosmian, C., Pereira, K., Kent, N., Sokol, R.J., Hannigan, J.H., 2019. Prenatal alcohol screening during pregnancy by midwives and nurses. Alcohol.: Clin. Exp. Res. 43 (8), 1747–1758.
Coons, K.D., Watson, S.L., Yantzi, N.M., Lightfoot, N.E., Larocque, S., 2017a. Health care students' attitudes about alcohol consumption during pregnancy: responses to narrative vignettes. Glob. Qual. Nurs. Res. 4, 2333393617740463.
Coons, K.D., Watson, S.L., Yantzi, N.M., Lightfoot, N.E., Larocque, S., 2017b. No alcohol Is recommended, but…": health care students' attitudes about alcohol consumption during pregnancy. Glob. Qual. Nurs. Res. 4, 2333393617707663.
Corrales-Gutierrez, I., Mendoza, R., Gomez-Baya, D., Leon-Larios, F., 2019. Pregnant women's risk perception of the teratogenic effects of alcohol consumption in pregnancy. J. Clin. Med. 8 (6), 907.
Coulomb, L., Douguet, F., Fillaut, T., Hontebeyrie, J., Vilbrod, A., 2019. Généralistes et sages-femmes libérales face au risque alcool chez la femme enceinte—quand les représentations influencent les pratiques. *¿ Interrogations?* Rev. Pluridiscip. Sci. Hum. Soc. (29).
Crawford-Williams, F., Steen, M., Esterman, A., Fielder, A., Mikocka-Walus, A., 2015a. If you can have one glass of wine now and then, why are you denying that to a woman with no evidence": knowledge and practices of health professionals concerning alcohol consumption during pregnancy. Women. Birth 28 (4), 329–335.
Crawford-Williams, F., Fielder, A., Mikocka-Walus, A., Esterman, A., 2015b. A critical review of public health interventions aimed at reducing alcohol consumption and/or increasing knowledge among pregnant women. Drug Alcohol Rev. 34 (2), 154161.
Daher, M., Olivares, H., Carré, D., Jaramillo, A., Tomicic, A., 2017. Experience and meaning in qualitative research: A conceptual review and a methodological device proposal. Forum Qual. Sozialforsch./Forum: Qual. Soc. Res. 18 (3), 24.
Dahl, B., Johannessen, A., Bondas, T., 2023. Opening Pandora's box: A meta-ethnography about alcohol use in pregnancy from midwives' and other healthcare providers' perspectives. Eur. J. Midwifery 7.
Doi, L., Cheyne, H., Jepson, R., 2014. Alcohol brief interventions in Scottish antenatal care: A qualitative study of midwives' attitudes and practices. BMC. Pregnancy. ChildBirth 14, 1–10.
Dozet, D., Burd, L., Popova, S., 2021. Screening for alcohol use in pregnancy: a review of current practices and perspectives. Int. J. Ment. Health Addctn. 21 (2), 1220–1239.
Dumas, A., Lejeune, C., Simmat-Durand, L., Bonnaire, C., Michaud, P., Hillaire, S., 2006. Prévention du syndrome d'alcoolisation fœtale (SAF). Pratiques et représentations des professionnels de la périnatalité. Alcoologie Addictologie 28 (4), 311–316.
Dyson, J., Onukwugha, F., Howlett, H., Combe, K., Catterick, M., Smith, L., 2023. Midwives and service users' perspectives on implementing a dialogue about alcohol use in antenatal care: A qualitative study. J. Adv. Nurs.
Edwards, A., Kelsey, B., Pierce-Bulger, M., Rawlins, S., Ruhl, C., Ryan, S., King, D.K., 2020. Applying ethical principles when discussing alcohol use during pregnancy. J. Midwifery Women's Health 65 (6), 795–801.
Ferguson, A., 2021. Conversations about alcohol use in pregnancy. In: Mukherjee, R.A.S., Aiton, N. (Eds.), Prevention, Recognition and Management of Fetal Alcohol Spectrum Disorders. Springer, Cham, pp. 55–66.
Flak, A.L., Su, S., Bertrand, J., Denny, C.H., Kesmodel, U.S., Cogswell, M.E., 2014. The association of mild, moderate, and binge prenatal alcohol exposure and child neuropsychological outcomes: a meta-analysis. Alcohol.: Clin. Exp. Res. 38 (1), 214–226.
France, K., Henley, N., Payne, J., D'Antoine, H., Bartu, A., O'Leary, C., Bower, C., 2010. Health professionals addressing alcohol use with pregnant women in Western Australia: barriers and strategies for communication. Subst. Use Misuse 45 (10), 1474–1490.
Giglia, R.C., Reibel, T., 2019. Has a national policy guideline influenced the practice of raising the topic of alcohol and breastfeeding by maternal healthcare practitioners? Aust. J. Prim. Health 25 (3), 275–280.
Gosdin, L.K., Deputy, N.P., Kim, S.Y., Dang, E.P., Denny, C.H., 2022. Alcohol consumption and binge drinking during pregnancy among adults aged 18–49 years—United States, 2018–2020. MMWR. Morb. Mortal. Wkly. Rep. 71 (1), 10–13.
Gouilhers, S., Meyer, Y., Inglin, S., Pfister Boulenaz, S., Schnegg, C., Hammer, R., 2019. Pregnancy as a transition: first-time expectant couples' experience with alcohol consumption. Drug Alcohol Rev. 38 (7), 758–765.
Green, C.R., Kaminsky, K.J., Tough, S., Roberts, N., Nagpal, T.S., Cook, J.L., 2021. Perspectives of Canadian health care providers on fetal alcohol spectrum disorder: has anything changed in 15 years? A brief report. J. Obstet. Gynaecol. Can. 43 (9), 1086–1089.
Green, C.R., Harding, K.D., Unsworth, K., Kaminsky, K., Roberts, N., Nagpal, T.S., Cook, J.L., 2024. Reporting on health care and social service provider approaches to promoting alcohol abstinence during pregnancy. Soc. Work Public Health 1–12.
Green, J., Thorogood, N., 2004. Qualitative Methods for Health Research. Sage.
Hammer, R., 2019. 'I can tell when you're staring at my glass…': self-or co-surveillance? Couples' management of risks related to alcohol use during pregnancy. Health, Risk & Society 21 (7–8), 335–351.
Hammer, R., Rapp, E., 2022. Women's views and experiences of occasional alcohol consumption during pregnancy: A systematic review of qualitative studies and their recommendations. Midwifery 111, 103357.
Harding, K.D., Dionne, A., Harding, E.V., 2022. You don't want to drink? what are you, pregnant?!" portrayals of alcohol and substance use during pregnancy on television. J. Fetal Alcohol Spectr. Disord. 4 (S1), e129–e161.
Hernandez, E.M., Calarco, J.M., 2021. Health decisions amidst controversy: Prenatal alcohol consumption and the unequal experience of influence and control in networks. Soc. Sci. Med. 286, 114319.
Herzig, K., Huynh, D., Gilbert, P., Danley, D.W., Jackson, R., Gerbert, B., 2006. Comparing prenatal providers' approaches to four different risks: alcohol, tobacco, drugs, and domestic violence. Women. Health 43 (3), 83–101.
Hocking, M., O'Callaghan, F., Reid, N., 2020. Women's experiences of messages relating to alcohol consumption, received during their first antenatal care visit: An interpretative phenomenological analysis. Women. Birth 33 (2), e122–e128.
Howlett, H., Mackenzie, S., Strehle, E.M., Rankin, J., Gray, W.K., 2019. A survey of health care professionals' knowledge and experience of foetal alcohol spectrum disorder and alcohol use in pregnancy. Clin. Med. Insights: Reprod. Health 13, 1179558119838872.
Jones, S.C., Telenta, J., Shorten, A., Johnson, K., 2011. Midwives and pregnant women talk about alcohol: what advice do we give and what do they receive? Midwifery 27 (4), 489–496.
Jones, S.C., Telenta, J., 2012. What influences Australian women to not drink alcohol during pregnancy? Aust. J. Prim. Health 18 (1), 68–73.

Kesmodel, U.S., Kesmodel, P.S., 2011. Alcohol in pregnancy: attitudes, knowledge, and information practice among midwives in Denmark 2000 to 2009. Alcohol.: Clin. Exp. Res. 35 (12), 2226–2230.
Kirk, S.F., Price, S.L., Penney, T.L., Rehman, L., Lyons, R.F., Piccinini-Vallis, H., Aston, M., 2014. Blame, shame, and lack of support a multilevel study on obesity management. Qual. Health Res. 24 (60), 790–800.
Lemola, S., Gkiouleka, A., Urfer-Maurer, N., Grob, A., Tritten Schwarz, K., Meyer-Leu, Y., 2020. Midwives' engagement in smoking- and alcohol-prevention in prenatal care before and after the introduction of practice guidelines in Switzerland: Comparison of survey findings from 2008 and 2018. BMC. Pregnancy. ChildBirth 20 (1), 31.
Leruste, S., Delfarguiel, L., Doray, B., Loubaresse, C., Sennsfelder, L., Maillard, T., Spodenkiewicz, M., 2023. The role of general practitioners in Reunion in detecting alcohol use in pregnant women and identifying fetal alcohol spectrum disorder: a qualitative study. Arch. Public Health 81 (1), 210.
Loxton, D., Chojenta, C., Anderson, A.E., Powers, J.R., Shakeshaft, A., Burns, L., 2013. Acquisition and utilization of information about alcohol use in pregnancy among Australian pregnant women and service providers. J. Midwifery Women's Health 58 (5), 523–530.
Lyall, V., Wolfson, L., Reid, N., Poole, N., Moritz, K.M., Egert, S., Askew, D.A., 2021. The problem is that we hear a bit of everything…": a qualitative systematic review of factors associated with alcohol use, reduction, and abstinence in pregnancy. Int. J. Environ. Res. Public health 18 (7), 3445.
Malpass, A., Shaw, A., Sharp, D., Walter, F., Feder, G., Ridd, M., Kessler, D., 2009. "Medication career" or "moral career"? the two sides of managing antidepressants: a meta-ethnography of patients' experience of antidepressants. Soc. Sci. Med. 68 (1), 154–168.
Mårdby, A.C., Lupattelli, A., Hensing, G., Nordeng, H., 2017. Consumption of alcohol during pregnancy—A multinational European study. Women. Birth 30 (4), e207–e213.
McCormack, J.C., Chu, J.T.W., Marsh, S., Bullen, C., 2022. Knowledge, attitudes, and practices of fetal alcohol spectrum disorder in health, justice, and education professionals: A systematic review. Res. Dev. Disabil. 131, 104354.
Meurk, C., Broom, A., Adams, J., Hall, W., Lucke, J., 2014. Factors influencing women's decisions to drink alcohol during pregnancy: findings of a qualitative study with implications for health communication. BMC. Pregnancy. ChildBirth 14 (1), 246.
Miner, K.J., Holtan, N., Braddock, M.E., Cooper, H., Kloehn, D., 1996. Barriers to screening and counseling pregnant women for alcohol use. Minn. Med. 79 (10), 43–47.
Morrello, R., Cook, P.A., Coffey, M., 2022. "Now, with a bit more knowledge, I understand why I'm asking those questions." midwives' perspectives on their role in the Greater Manchester health and social care partnership's programme to reduce alcohol exposed pregnancies. Midwifery. 110, 103335.
National Institute for Health and Care Excellence (NICE), 2008. Routine Antenatal Care for Healthy Pregnant Women. CG 62. NICE, London, UK.
Olusanya, O.A., Olokunlade, T., Rossheim, M.E., Greene, K., Barry, A.E., 2021. Alcohol messages disseminated to pregnant women by midwives. Am. J. Drug Alcohol Abuse 47 (2), 255–264.
Olusanya, O.A., Greene, K.M., Rossheim, M.E., Barry, A.E., 2023. Midwives' knowledge and perceived barriers to screening alcohol use among pregnant women in a southwestern US state. Drug Alcohol Rev. 42 (2), 384–388.
Oni, H.T., Buultjens, M., Abdel-Latif, M.E., Islam, M.M., 2019. Barriers to screening pregnant women for alcohol or other drugs: A narrative synthesis. Women. Birth 32 (6), 479–486.
Oni, H.T., Buultjens, M., Davis, D., Abdel-latif, M., Islam, M.M., 2020. Barriers and facilitators in antenatal settings to screening and referral of pregnant women who use alcohol or other drugs: A qualitative study of midwives' experience. Midwifery. 81, 102595.
Payne, J., Elliott, E., D'Antoine, H., O'Leary, C., Mahony, A., Haan, E., Bower, C., 2005. Health professionals' knowledge, practice and opinions about fetal alcohol syndrome and alcohol consumption in pregnancy. Aust. N. Z. J. Public health 29 (6), 558–564.
Payne, J.M., Watkins, R.E., Jones, H.M., Reibel, T., Mutch, R., Wilkins, A., Bower, C., 2014. Midwives' knowledge, attitudes and practice about alcohol exposure and the risk of fetal alcohol spectrum disorder. BMC. Pregnancy. ChildBirth 14, 1–13.
Pehlke-Milde, J., Radu, I., Gouilhers, S., Hammer, R., Meyer, Y., 2022. Women's views on moderate and low alcohol consumption: stages of the subjective transition from pregnancy to postpartum. BMC. Pregnancy. ChildBirth 22 (1), 902.
Pistone, I., Dahl, B., Bondas, T., 2024. Trapped in a maze: A meta-ethnography of women's experiences of alcohol use in pregnancy. Soc. Sci. Med., 117337
Plaisier, K.J., 1989. Fetal alcohol syndrome prevention in American Indian communities of Michigan's upper peninsula. Am. Indian Alsk. Native Ment. Health Res.: J. Natl. Cent. 3 (1), 16–33.
Popova, S., Dozet, D., Akhand Laboni, S., Brower, K., Temple, V., 2022. Why do women consume alcohol during pregnancy or while breastfeeding? Drug Alcohol Rev. 41 (4), 759–777.
Rockliffe, L., Peters, S., Heazell, A.E., Smith, D.M., 2021. Factors influencing health behaviour change during pregnancy: a systematic review and meta-synthesis. Health Psychol. Rev. 15 (4), 613–632.
Scott, S., Sher, J., 2023. Effect of alcohol during pregnancy: a public health issue. Lancet Public Health 8 (1), e4–e5.
Sandall, J., Fernandez Turienzo, C., Devane, D., Soltani, H., Gillespie, P., Gates, S., Jones, L.V., Shennan, A.H., Rayment-Jones, H., 2024. Midwife continuity of care models versus other models of care for childbearing women. Cochrane Database Syst. Rev. 2024, 4. Art. No.: CD004667.
Schölin, L., Hughes, K., Bellis, M.A., Eriksson, C., Porcellato, L., 2019. I think we should all be singing from the same hymn sheet"–English and Swedish midwives' views of advising pregnant women about alcohol. Drugs: Educ. Prev. Policy 26 (5), 394–400.
Schölin, L., Watson, J., Dyson, J., Smith, L.A., 2021. Midwives' views on alcohol guidelines: a qualitative study of barriers and facilitators to implementation in UK antenatal care. Sex. Reprod. Healthc. 29, 100628.
Smith, L.A., Dyson, J., Watson, J., Schölin, L., 2021. Barriers and enablers of implementation of alcohol guidelines with pregnant women: a cross-sectional survey among UK midwives. BMC. Pregnancy. ChildBirth 21, 1–9.
Talbot, H., Peters, S., Furber, C., Smith, D.M., 2024. Midwives' experiences of discussing health behaviour change within routine maternity care: A qualitative systematic review and meta-synthesis. Women Birth 37 (2), 303–316.
Thomas, J., Harden, A., 2008. Methods for the thematic synthesis of qualitative research in systematic reviews. BMC med. Res. Methodol. 8, 1–10.
Tong, A., Flemming, K., McInnes, E., Oliver, S., Craig, J., 2012. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. BMC. Med. Res. Methodol. 12 (1), 1–8.
Ujhelyi Gomez, K., Goodwin, L., Chisholm, A., Rose, A.K., 2022. Alcohol use during pregnancy and motherhood: Attitudes and experiences of pregnant women, mothers, and healthcare professionals. PLoS One 17 (12), e0275609.
van der Wulp, N.Y., Hoving, C., de Vries, H., 2013. A qualitative investigation of alcohol use advice during pregnancy: Experiences of Dutch midwives, pregnant women and their partners. Midwifery 29 (11), e89–e98.
Wangberg, S.C., 2015. Norwegian midwives' use of screening for and brief interventions on alcohol use in pregnancy. Sex. Reprod. Healthc. 6 (3), 186–190.
World Health Organization (WHO), 2014. Guidelines for the Identification and Management of Substance use and Substance use Disorders in Pregnancy. World Health Organization.
World Health Organization (WHO), 2016. WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience. World Health Organization.