Alcohol messages disseminated to pregnant women by midwives

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**ABSTRACT**

**Background:** Pregnant women frequently report inconsistent messages regarding alcohol consumption from their healthcare providers. Midwives play a major role in prenatal care. However, little research has examined alcohol-related information provided by midwives.

**Objective:** To examine alcohol-related messages disseminated to pregnant women by midwives.

**Methods:** In 2018, 61 certified professional midwives (CPMs) and certified nurse-midwives (CNMs) were recruited from professional organizations in a southwestern state. Midwives responded to an online cross-sectional survey containing the prompt: “A pregnant patient confides in you that she drinks alcohol. She then asks you to tell her a “safe” level of alcohol consumption that won’t cause harm to her unborn fetus. How would you respond?” Open-ended responses were analyzed through content analysis and categorized using an inductive approach.

**Results:** Responses were grouped into five non-exclusive themes: “harmful effects and unknown safe limits” (77.0%); “abstaining is best” (50.8%); “light drinking is acceptable” (16.4%); “describe your drinking” (21.3%); “I will refer you” (16.4%). The most frequently shared messages were “safe levels of prenatal alcohol use are unknown” (68.9%) and “discontinue alcohol during pregnancy” (45.9%). However, some messages contradicted US dietary guidelines, including “a little bit of alcohol unlikely to cause harm” (11.5%); “cut-down if having more than 1–2 drinks per occasion” (4.9%); and “if you must drink, wine is best” (1.6%). CPMs were less likely to share abstinence messages (p = .003) and more likely to suggest referrals (p = .024), compared to CNMs.

**Conclusion:** Concerted efforts are needed to ensure information disseminated aligns with health guidelines and encourages abstinence during pregnancy.

**Introduction**

According to the 2015–2017 Behavioral Risk Factor Surveillance System (BRFSS), approximately 11.5% of pregnant women in the United States (US) reported current alcohol consumption (within the past 30 days), and 3.9% reported current binge drinking (≥4 drinks on any one occasion in the past 30 days) (1). These prevalence rates are slightly higher than previous BRFSS estimates from 2011 to 2013 (current drinking 10.2% and binge drinking 3.1%) (2). Concomitantly, prevalence for prenatal alcohol use, i.e. any amount among women in the general population, was approximated to be 14.8% (US) and 9.8% (globally) (3).

Scholarly investigations indicate that prenatal alcohol exposure can result in a vast spectrum of adverse consequences for the unborn child. Alcohol is a teratogen, which passes through the placenta and affects fetal neuro-development (4,5). Fetuses exposed to alcohol can experience damage to their developing brains, cognitive deficits, behavioral problems, and delayed physical growth, as well as exhibit abnormal facial characteristics (6,7). These negative outcomes resulting from prenatal alcohol exposure is collectively known as fetal alcohol spectrum disorders (FASDs) (7,8). The most visibly recognizable and severe form of FASD is fetal alcohol syndrome (FAS) which is the leading non-genetic cause of preventable birth defects as well as developmental and intellectual disabilities (3,9). In the US, prevalence estimates for FASD and FAS are reported to be 40,000 of births per year (10) and 7.5 per 1,000 live births (11), respectively. Given that there is no known safe level of alcohol consumption during pregnancy, the 2015–2020 US dietary guidelines advise that pregnant women abstain from drinking entirely (12). Additionally, the US Prevention Services Task Force (USPSTF) has issued an advisory urging routine alcohol use screening for all pregnant women (13).
Healthcare professionals who disseminate information in accordance with current recommendations can play an important role in discouraging drinking among pregnant women, thereby improving pregnancy and birth outcomes (14). Yet, messages on alcohol use during pregnancy have been fraught with ambiguity and discrepancy, complicating women’s resolve to avoid perinatal alcohol use (15). In the US, some pregnant women report inconsistent and confusing messages from their healthcare providers that purportedly endorse minimal alcohol consumption, particularly condoning it during the third trimester of pregnancy (15).

Additionally, women from other western countries have described their healthcare providers’ information as overwhelming, contradictory, and inadequate (16). Conflicting messages could have implications for a woman’s decision to engage in, or abstain from, alcohol consumption during pregnancy (17). Accordingly, it is of utmost importance that pregnant women receive alcohol messaging from their prenatal care providers that is consistent, effective, and aligned with established public health guidelines.

The current study explored alcohol-related messages midwives would disseminate to their pregnant patients. We focused on midwives, specifically, because they play an influential role in promoting perinatal alcohol abstinence messages and screening pregnant women’s alcohol use behaviors. In all clinical settings, midwives are central to providing perinatal care services, e.g., alcohol education, alcohol use assessment, etc. (18,19). In addition to homes and birth centers, midwives work in a variety of settings such as clinics, hospitals, and medical centers. For instance, approximately 50% of midwives who participated in this study worked in a hospital setting (20). The fundamental of the midwifery care philosophy is established on a “woman-centered care” model (21). Consequently, the midwife’s clinical practice is committed to providing individualized care that is responsive to each woman’s emotional, social, physical, psychological wellbeing, needs as well as preferences. In 2018, 9.4% of births in the US were delivered by CNMs. Moreover, this prevalence was a high as 20.1% among American Indians or Alaska Natives (22).

Additionally, midwives are primary healthcare providers in out-of-hospital birth settings (i.e. home births and birth centers) (18). Between 2004 and 2017, estimates for out-of-hospital births have risen by over 75% from 0.9% to 1.6% of all births in the US (23). It is likely that home-birth rates continue to see an increasing trend due to the current COVID-19 pandemic and accompanying reluctance to voluntarily enter a hospital setting (24).

The Lancet Series on Midwifery (2014) states that, “midwives are crucial to the achievement of national and international goals and targets in reproductive, maternal, newborn, and child health…” (25). Consequently, midwives are projected to play a key role in enhancing access to healthcare services (26,27). In the US, practicing midwives consist of certified nurse midwives (CNMs) certified midwives, certified professional midwives (CPMs), and lay midwives (28). However, this investigation focuses on CPMs and CNMs because they are licensed to practice in 50 states (including District of Columbia) and 33 states of the country, respectively. CNMs are registered nurses who have completed a graduate-level program in nurse-midwifery and work in a variety of settings such as birth centers, homes, clinics, hospitals, medical centers, and their own private practices. CNMs offer reproductive health services involving, but not limited to pregnancy, childbirth, and postpartum period. For instance, they are authorized to provide prescriptive and primary care services. Conversely, CPMs are direct-entry midwives who acquire training in a midwifery program. CPMs do not work in hospital settings, neither do they provide prescriptive and primary care services. Given the differential training and work settings of these two midwife types as well as their unique daily clinical experiences and services offered, the current study examined whether the messages conveyed by CPMs and CNMs differed. To our knowledge, this cross-sectional study was one of the first to assess alcohol-related messages that midwives would disseminate to pregnant patients in the US.

**Methods**

**Procedures and Participants**

Between March and May 2018, certified professional midwives (CPMs) and certified nurse-midwives (CNMs) from a southwestern state completed an online cross-sectional survey. Midwives were eligible to participate in the current study if they had received training in the field of prenatal care, labor, delivery, and were members of a professional organization in the state. Convenience sampling was utilized. To identify potential participants, membership e-mail lists were obtained with permission from the state’s Certified Professional Midwife organization and American College of Nurse-Midwives affiliate, respectively. An e-mail was sent to members describing the study and providing a link to the structured, self-administered Qualtrics (29) survey. This survey included demographic questions and a study prompt. Prior to distribution, healthcare experts
(i.e. four physicians and one nurse) assessed the survey for face validity, content validity, clarity of questions, and ease of completion. All procedures complied with the research protocols of the professional midwife organizations and were approved by the Institutional Review Board at the first author’s institution.

The online survey was pilot tested by contacting a sub-sample of CPMs (n = 20) and CNMs (n = 25) in March 2018. A total of 12 midwives completed the pilot survey. Given that no modifications were made to the study methods nor questionnaire, these 12 midwives were included in the final sample. In May 2018, invitation e-mails were sent to a total of 438 midwives (N\textsubscript{CPM} = 174, N\textsubscript{CNM} = 264). Following Dillman (30), participants had approximately 6 weeks to complete the online questionnaire and follow-up e-mails were sent after week 1 and week 4 to increase response rates (30). All participants provided informed consent prior to completing the survey. A total of 61 midwives completed the online survey (N\textsubscript{CPM} = 21, N\textsubscript{CNM} = 40). This response rate (13.9%) was nearly identical to previous studies that obtained data from midwives (31–33). Table 1 displays demographic characteristics. Respondents were mostly CNMs (n = 40/61; 65.6%), non-Hispanic White (n = 53/60; 88.3%), 36 years or older (n = 52/61; 85.2%), held a master’s degree (n = 31/60; 51.7%), and had 5 or more years of experience as a midwife (n = 39/61; 63.9%). All CPMs reported attending deliveries either at a birth center (n = 15/21; 71.4%) or home (n = 6/21; 28.6%) while CNMs delivered babies in the hospital setting (n = 28/39; 71.8%), birth center (n = 7/39; 17.9%) and/or home (n = 4/39; 10.3%). Respondents also reported a mean age of 49.0 years (SD = 12.89). The average number of pregnant women seen by midwives per week was 29.4 (SD = 27.97) while average years of midwifery practice was 13.8 years (SD = 10.88).

**Study Prompt**

Midwives were presented with the following prompt: “A pregnant patient confides in you that she drinks alcohol. She then asks you to tell her a “safe” level of alcohol consumption that won’t cause harm to her unborn fetus. How would you respond to this patient?” Participants were given space to type their open-ended response to this question. Whereas some participants only typed a few phrases, others typed multiple paragraph responses. Responses were stored on a password-protected Qualtrics account. A Microsoft Excel file containing participants’ responses was downloaded after the survey link deactivated.

### Table 1. Sociodemographic Characteristics of Midwives Participating in Study (N = 61).

|                           | Total sample (N = 61) | CPMs (n = 21) | CNMs (n = 40) |
|---------------------------|-----------------------|--------------|--------------|
| **Gender**                |                       |              |              |
| Female                    | 60 (98.4)             | 20 (95.2)    | 40 (100)     |
| Transgender               | 1 (1.6)               | 1 (4.8)      | 0 (0)        |
| **Racial group**          |                       |              |              |
| White non-Hispanic        | 53 (88.3)             | 20 (95.2)    | 33 (84.6)    |
| Hispanic/Latina           | 1 (1.7)               | 0 (0)        | 1 (2.6)      |
| Black/African American    | 3 (5.0)               | 0 (0)        | 3 (7.7)      |
| Other                     | 3 (5.0)               | 1 (4.8)      | 2 (5.1)      |
| **Age categories, y**     |                       |              |              |
| ≤ 35                      | 9 (14.8)              | 4 (19.0)     | 5 (12.5)     |
| 36–45                     | 16 (26.2)             | 3 (14.3)     | 13 (32.5)    |
| 46–55                     | 12 (19.7)             | 6 (28.6)     | 6 (15.0)     |
| 56–65                     | 16 (26.2)             | 7 (33.3)     | 9 (22.5)     |
| ≥ 66                      | 8 (13.1)              | 1 (4.8)      | 7 (17.5)     |
| **Education**             |                       |              |              |
| Diploma                   | 3 (5.0)               | 3 (14.3)     | 0 (0)        |
| Associate                 | 5 (8.3)               | 5 (23.8)     | 0 (0)        |
| Bachelor’s                | 11 (18.3)             | 10 (47.6)    | 1 (2.6)      |
| Master’s                  | 31 (51.7)             | 2 (9.5)      | 29 (74.4)    |
| Doctorate                 | 10 (16.7)             | 1 (4.8)      | 9 (23.1)     |
| **Years of experience, y**|                       |              |              |
| ≤ 5                       | 22 (36.1)             | 6 (28.6)     | 16 (40.0)    |
| 6–15                      | 12 (19.7)             | 5 (23.8)     | 7 (17.5)     |
| 16–25                     | 17 (27.9)             | 4 (19.0)     | 13 (32.5)    |
| ≥ 26                      | 10 (16.4)             | 6 (28.6)     | 4 (10.0)     |
| **Employment location**   |                       |              |              |
| Urban inner city          | 10 (16.4)             | 1 (4.8)      | 9 (22.5)     |
| Urban not inner city      | 19 (31.1)             | 6 (28.6)     | 13 (32.5)    |
| Rural                     | 17 (27.9)             | 2 (9.5)      | 15 (37.5)    |
| Suburban                  | 15 (24.6)             | 12 (57.1)    | 3 (7.5)      |
| **Locations for births**  |                       |              |              |
| Hospital                  | 28 (46.7)             | 0 (0)        | 28 (71.8)    |
| Birth center              | 22 (36.7)             | 15 (71.4)    | 7 (17.9)     |
| Home                      | 10 (16.7)             | 6 (28.6)     | 4 (10.3)     |

**Abbreviations:** CNMs, certified nurse-midwives; CPMs, certified professional midwives.

\( ^{a}n = 60 \) due to missing data.

\( ^{b}n = 39 \) due to missing data.

### Data Analysis

Content analysis was used to analyze online responses to the open-ended question while an inductive approach was used to systematically categorize responses into codes and themes. In this investigation, content analysis was proposed as the ideal methodological approach given our interest in analytically describing midwife’s communication to pregnant women using both qualitative and quantitative methods (34,35). Open-ended survey responses tend to offer insight about an experience or topic in a respondent’s own words, providing the opportunity to clarify and explain, while also portraying diversity in participants’ experiences. Written responses were systematically and inductively categorized into codes and themes. A two-member coding team (O.O, and T.O) conducted the qualitative content analysis in a series of four steps (decontextualization, recontextualization, categorization, and compilation) (34). First,

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each midwives’ verbatim response was read to understand the data in its entirety, identify patterns, and extract key components. Meaning units that aligned with the study’s objectives were identified and compared to the original responses to ensure that all relevant information had been included; lengthy meaning units were further condensed and re-organized. These meaning units were classified into codes and used to inductively create a coding list (34). Codes were consistently applied to the text and summarized data were collated into themes and categories. Importantly, to promote dependability of the findings, each step of this process involved four reviews of the data (i.e. both coders conducted the four analytic steps twice) followed by collaborative review sessions to reach unanimous coding and analytical decisions (36). A third reviewer (A.B.) provided additional feedback during this process. In addition, the research team preserved the Microsoft Excel sheets documenting the content analysis process from raw data to final results to help ensure transparency.

To permit statistical analyses, dichotomous indicators of the presence of each code or theme were created. Descriptive statistics including frequencies and percentages were used to quantify codes and categories/themes (35). Multiple codes could be assigned to each response. As a result, the total number of respondents (n = 61) served as the denominator for percentages reported for all codes/themes. Using STATA/IC 14.2 (64-bit) software (37) for analyses, Fisher’s exact test was used to examine differences in prenatal alcohol messaging between midwife professional groups (i.e. CPMs and CNMs).

Results

Final Sets of Codes from Midwives’ Open-Ended Responses

The final set of codes that described participant responses are presented in Figure 1. Most of the participants provided responses that aligned with current US dietary alcohol guidelines. Majority of midwives (n = 42/61; 68.9%) reported that safe levels of prenatal alcohol use were unknown, and nearly one-half (n = 28/61; 45.9%) encouraged pregnant women to discontinue their alcohol use. Nevertheless, as Figure 1 clearly portrays, alcohol messages differed widely across respondents, and many disparate topics were raised. For instance, some responses seemed to suggest that alcohol use was acceptable at certain consumption levels, at particular stages in pregnancy, or with specific types of alcohol.

Main Themes from Midwives’ Open-Ended Responses

Overall, the content analysis of midwives’ responses identified five main themes as shown in Table 2.
| Theme                              | Total sample (N = 61) | Representative Quotes from CPMs (n = 21) | Representative Quotes from CNMs (n = 40) | Fisher's Exact Test Two-tailed |
|-----------------------------------|-----------------------|------------------------------------------|----------------------------------------|-------------------------------|
| Harmful effects and unknown safe limits | 47 (77.0) | 17 (81.0) | 30 (75.0) | 0.753 |
| Abstaining is best | 31 (50.8) | “no guaranteed safe level of consumption for the baby” | “no way to affirm if and how much harm can happen to the unborn baby” | 0.003 |
| Light drinking is acceptable | 10 (16.4) | “for the sake of the baby it is best to discontinue use” | “encourage to abstain until after her baby is born” | 0.725 |
| Describe your drinking | 13 (21.3) | “if she wishes to drink we ask that she do so at the first trimester and limit her consumption to an occasional glass of wine or beer” | “if trying to conceive I would say it is recommended not at all, but 1–2 drinks on occasion probably will not hurt” | 0.341 |
| I will refer you | 10 (16.4) | “why are you drinking and how can we help you quit and deal with the issues that lead you to drink?” | “one drink on occasion in the 3rd trimester is not likely to cause harm. If she is unable to have ONLY one drink, then I would recommend not to drink at all” | 0.024 |

Abbreviations: CNMs, certified nurse-midwives; CPMs, certified professional midwives.
The authors have assigned more than one code per respondent. As a result, the total number of respondents (n = 61) served as the denominator for the percentages reported for all codes/themes.
Harmful effects and unknown safe limits
The most frequent theme expressed by participants was related to alcohol’s “harmful effects and unknown safe limits” (n = 47/61; 77.0%). In their open-ended responses, both midwife professional groups emphasized that “safe levels of alcohol in pregnancy are unknown” and that “alcohol produces harmful effects on fetus.” The word “safe” was used repeatedly by midwives as they conveyed information about the consequences of alcohol use during pregnancy. For instance, representative quotes from CPMs (n = 17/21; 81.0%) and CNMs (30/40; 75.0%) underscored that there was “no way to affirm if and how much harm can happen to the unborn baby” and that there was “no guaranteed safe level of consumption for the baby” as depicted in Table 2. There was no significant difference between CPMs and CNMs regarding their communication on the uncertainties surrounding alcohol levels that could be detrimental to the fetus (p = .753).

Abstaining is best
The second most commonly expressed theme in participants’ messages was that “abstaining is best” (n = 31/61; 50.8%). Several CPMs (n = 5/21; 23.8%) and CNMs (26/40; 65.0%) counseled women to discontinue alcohol use prior to and during pregnancy. However, the content and tone of these abstinence messages varied substantially across respondents. For instance, some midwives provided advice that was emotionally neutral such as “current recommendations are to abstain from drinking” and pregnant women should “abstain until after the baby is born.” Others admonished pregnant women and gave more direct advice. For instance, one woman noted that “you need to stop for baby’s sake. You’re a mother now and good moms don’t give alcohol or cigarettes to children.” As is demonstrated by this quotation, some midwives referenced the social norms and expectations of mothers, suggesting that women who drink during pregnancy are not “good” mothers. Importantly, there was a statistically significant difference between CPMs and CNMs regarding alcohol abstinence messages presented to their patients (p = .003) as shown in Table 2. Specifically, CNMs were more likely to counsel women to avoid alcohol use during pregnancy than CPMs.

Light drinking is acceptable
In contrast to messages promoting abstinence, nearly one-in-six respondents (n = 10/61; 16.4%) shared messages condoning alcohol consumption during pregnancy. Some CPMs (n = 4/21; 19.0%) and CNMs (6/40; 15.0%) delivered responses that were inconsistent with current US dietary alcohol guidelines. In these responses, midwives often suggested an alcohol quantity that they perceived as safe for pregnant women (e.g. “half a glass” or an “occasional serving”). Some midwives also offered opposing, contradictory messages such as, “if trying to conceive I would say it is recommended not at all, but 1–2 drinks on occasion probably will not hurt.” As one midwife noted, “if she wishes to drink, we ask that she do so after the first trimester and limit her consumption to an occasional glass of wine or beer.” The issue of gestational stage was also bought up in this and other responses, with midwives counseling against drinking during the first trimester, but condoning drinking during subsequent trimesters. As another noted, “a drink on occasion in the third trimester is not likely to cause harm.” The implication of these messages was that there are certain times during pregnancy when alcohol is not harmful to the fetus. Moreover, certain types of alcohol were identified as more likely to be “safe.” For instance, wine was frequently brought up as the suggested type of alcohol that is permissible during pregnancy (e.g. “if you must drink alcohol, wine would be the best choice”). Another noted the importance of avoiding alcohol-related consequences by saying, “if the patient is going to drink, don’t drive, follow with twice as much water, and enjoy the nap they might get afterwards.” These responses depicted a lack of consensus among midwives concerning safe alcohol levels, frequency of alcohol use, and time frame for safe alcohol consumption during pregnancy. There was no statistical difference between CPMs and CNMs in disseminating messages that light drinking is acceptable (p = .725).

Describe your drinking
In their responses, some midwives (n = 13/61; 21.3%) responded to the study prompt by screening their patient’s prenatal alcohol use. Specifically, midwives covered topics such as drinking quantity and related perceptions and cognitions (e.g. “how much do you currently drink?” and “what do you think about how much you drink?”). Other midwives inquired about reasons for drinking (“why are you drinking . . . ?”) as well as drinking situations and contexts (“tell me a bit about when and where you drink alcohol?”). Finally, some asked about patient’s ability to stop drinking (“do you think you would have difficulty not drinking?” and “is it difficult to abstain from drinking alcohol?”). Overall, some CPMs (n = 6/21; 28.6%) and CNMs (n = 7/40; 17.5%) referenced alcohol screening questions in their responses. However, none of the questions preferred by respondents identically mirrored those from validated alcohol screening instruments used to assess risky drinking among pregnant women such as TWEAK and T-ACE (38). When comparing CPMs and CNMs,
there was no statistically significant difference in the frequency with which they posed follow-up questions about drinking \((p = .341)\). See Table 2.

**I will refer you**

Some CPMs \((n = 7/21; 33.3\%)\) and CNMs \((3/40; 7.5\%)\) opted to refer their pregnant patients as shown in their online responses to the open-ended questions. Midwives suggested that “referral to an addiction specialist might be needed or a counselor as well” and “if she has any alcohol consumption, she is no longer low risk and will need to find another healthcare provider.” Another likewise noted that she “would refer to counseling and social services.” CPMs were significantly more likely to share communications on referrals than CNMs \((p = .024)\).

**Discussion**

Midwives, in particular, are poised to play a pivotal role in promoting women’s abstinence from prenatal alcohol use and, thereby, reducing incidence of FASDs and other health-related morbidities occurring from exposure to alcohol in-utero \((39)\). Drawing from online responses to a study prompt from a sample of midwives in a southern state, this study explored the alcohol-related messages that midwives would communicate to their pregnant patients if they self-reported drinking and requested information on a “safe” level of alcohol consumption. Using a content analysis approach, we identified overarching themes emerging from these hypothetical communications.

First, a substantial proportion of midwives explained that there is no quantity of alcohol use that is known to be safe for pregnant women. Furthermore, respondents identified negative consequences in line with scientific consensus that prenatal alcohol exposure can result in various adverse effects characterized by a continuum of syndromic anomalies in the unborn child \((7)\). Some reported they would explicitly tell patients to abstain and many referred to relevant research and science on the topic.

Nevertheless, nearly one-sixth of respondents \((n = 10/61; 16.4\%)\) shared prenatal alcohol messages conflicting with national alcohol guidelines, which could ultimately cause harm to the fetus. This study finding is consistent with the limited existing US research demonstrating health professionals sometimes share prenatal alcohol messages that are confusing and/or contradictory to public health guidelines \((15)\). As a means to reduce stress, some health providers have been cited as condoning minimal alcohol intake by their pregnant patients \((15)\). Healthcare providers’ contradictory information could significantly impact a pregnant woman’s decision to drink, or to continue to drink during pregnancy. It is crucial that messaging and guidelines shared by all stakeholders align with standardized alcohol guidelines in the US further exploration is warranted on the cause(s) of midwives sharing alcohol messages counter to these guidelines.

Given the uncertainty and lack of scientific evidence on a “safe” level of prenatal alcohol exposure, alcohol abstinence is recommended as the safest option during pregnancy. Among the current sample, CPMs were less likely to promote abstinence compared to their CNMs peers. However, CPMs were more likely to suggest referrals for treatment than CNMs. Although we do not know the reason for these different outcomes, a plausible explanation may be due to variations in trainings between respective midwife groups. In their responses, some CPMs shared that they “… would refer her to an OB/GYN who is able to take high-risk patients as I am not allowed to continue care for a woman who is high risk” and “if she has any alcohol consumption, she is no longer low risk and will need to find another healthcare provider.” As a result, it is likely that CPMs, who take deliveries outside of hospital settings (i.e. at home and/or birth centers), may need to refer patients who are considered high risk and/or require specialized obstetric care. Consequently, further investigation is warranted to examine and address this problematic issue.

In their online responses to the open-ended question, midwives did not discuss using validated alcohol screening tools (i.e. TWEAK, T-ACE) to assess risky drinking behaviors among pregnant women. During screening, it is important to note that random questions measuring only quantity and/or frequency of drinking may fail to identify some women at risk of prenatal alcohol use \((38,40)\). Moreover, while some pregnant women willingly divulge their drinking behavior to health professionals, others may either refuse to respond, or answer inaccurately, due to assumptions that small quantities of alcohol are non-significant or that they would be judged for their drinking \((38)\). T-ACE and TWEAK are simple, standardized alcohol instruments that could methodically inform midwives or other health professionals on how to tailor their alcohol-related communications \((38)\).

Study findings should be interpreted with the following limitations in mind. In comparison to transcripts from in-depth interviews, where the researcher can ask follow-up questions, responses to open-ended survey questions are typically more concise. Thus, future investigations where interviews are employed may help provide further details and insight on this important topic. Secondly, compared to objectively observing midwives’ interactions with patients, this methodological study prompt may be subject to social desirability bias. Third, it is unclear how
generalizable these findings are to all midwives in the US given this study relied on convenience sampling within one US state and had a relatively low response rate. Despite these limitations, this qualitative study provides initial insights into the types of alcohol-related recommendations made by midwives to pregnant women, and highlight the need for further investigations.

Conclusion

This study serves as an initial call for the planning and implementation of effective educational campaigns among midwives to create awareness about the risks of alcohol during pregnancy. Efforts should be made to mitigate perceived barriers that interfere with midwives providing accurate prenatal alcohol use education and screening to pregnant women. These barriers may include patients’ denial/sensitivity, inadequate training, as well as insufficient knowledge regarding screening and the effects of fetal alcohol exposure (41). Disseminated information ought to incorporate behavioral counseling interventions that address risk factors causing women to drink during pregnancy (i.e. psychosocial stressors, polysubstance use, etc.). In managing psychosocial stressors, healthcare providers must emphasize the role of the woman’s social network in reducing anxiety and emotional strain as well as potentially condoning prenatal alcohol use. Implementation and routine use of alcohol assessment questionnaires, i.e. TWEAK and T-ACE, should be promoted to generate accurate information regarding pregnant women’s risky drinking. Additionally, alcohol screening and counseling sessions ought to employ best-practices that facilitate beneficence, nonmaleficence, and patient’s autonomy (42). Given the proportion of participants who provided communication conflicting with public health guidelines, instructions, and information specifically on the risks of alcohol use in pregnancy should be embedded or emphasized in midwife continuing education programs. Lastly, future research is required on clinical assessments and information provided by healthcare professionals to pregnant women with regards to other substance use such as nicotine, marijuana, cocaine, and opioids.

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