Global Qualitative Nursing Research
Volume 3: 1–12

DOI: 10.1177/2333393617707663
journals.sagepub.com/home/gqn
SAGE

"No Alcohol Is Recommended, But . . .": Health Care Students' Attitudes About Alcohol Consumption During Pregnancy

Kelly D. Coons[1], Shelley L. Watson[1], Nicole M. Yantzi[1], Nancy E. Lightfoot[1], and Sylvie Larocque[1]

Abstract

Canadian findings suggest that health care providers require further training and education to support their work preventing fetal alcohol spectrum disorder (FASD). However, the knowledge and training of health care students in relation to FASD remains largely unexplored. The purpose of this study was to understand the attitudes and beliefs of health care students about alcohol use during pregnancy. Twenty-one health care students participated in a scenario-based vignette about alcohol consumption during pregnancy. Although almost all students recognized that no alcohol consumption during pregnancy is the safest recommendation, many students recounted that this advice is not always conveyed during encounters with their pregnant patients. Three primary themes related to students' attitudes concerning alcohol use during pregnancy were identified. Health care professionals in training need further education about the risks of alcohol consumption during pregnancy and the potential health outcomes associated with prenatal alcohol exposure.

Keywords

Alcohol / alcoholism, disability, developmental, education, professional, health behavior, health care, pregnancy, relationships, health care, self-efficacy, women's health

Received February 15, 2017; revised March 31, 2017; accepted April 4, 2017

Introduction

Fetal alcohol spectrum disorder (FASD) is a broad term used to describe the range of presentations and impairments resulting from prenatal alcohol exposure, including physical, behavioral, emotional, adaptive, and neurocognitive disabilities (Cook et al., 2016; Pei, Tremblay, McNeil, Poole, & McFarlane, 2017). FASD has been identified as a major public health concern in Canada, and consequently there is a need for accurate information about the potential consequences of alcohol use during pregnancy. According to the Public Health Agency of Canada, "there is no safe amount, and no safe time, to drink alcohol during pregnancy" (Public Health Agency of Canada, 2014). In 2010, the *Journal of Obstetrics and Gynaecology of Canada*, in conjunction with the Canadian Association of Midwives, the Association of Obstetricians, the College of Family Physicians of Canada, and the Society of Rural Physicians of Canada, published the Alcohol Use and Pregnancy Consensus Guidelines (The Society of Obstetricians and Gynaecologists of Canada [SOGC], 2010). In the clinical guidelines, the SOGC determined that there is evidence that alcohol consumption during pregnancy can cause fetal harm. However, the SOGC concluded that there is insufficient evidence regarding fetal safety or harm at low levels (i.e., low-risk drinking), defined as no more than two standard drinks on any 1 day and no more than nine standard drinks a week for women, of alcohol consumption during pregnancy. The SOGC recommends that abstinence is the cautious choice for a woman who is or might become pregnant (The Society of Obstetricians and Gynaecologists of Canada, 2010), a recommendation that was recently reiterated in the updated Canadian guidelines for FASD diagnosis (Cook et al., 2015). However, considerable debate still exists regarding low levels of alcohol consumption during pregnancy (Nathanson, Jayesinghe, & Roycroft, 2007; O'Brien, 2007), which may lead to confusion between research evidence and suggested practices, and

[1]Laurentian University, Sudbury, Ontario, Canada

Corresponding Author:
Kelly D. Coons, School of Rural and Northern Health, Laurentian University, 935 Ramsey Lake Road, Sudbury, Ontario P3E 2C6, Canada.
Email: kd_coons@laurentian.ca

even confusion between recommended clinical guidelines from various regulatory bodies.

Subsequently, health care professionals may have different attitudes about "safe" levels of alcohol use during pregnancy and may provide different recommendations to their patients. Health care professionals play a critical role in the prevention of FASD, particularly through guidance about alcohol use and consumption during pregnancy. However, Canadian results suggest that less than half of family physicians discuss the risks of alcohol use, drug use, or smoking during pregnancy with women of childbearing age (Tough, Clarke, Hicks, & Clarren, 2005). Providing clear and consistent information to women is also critical (Raymond, Beer, Glazebrook, & Sayal, 2009) as a "faulty information delivery system" (Anderson, Hure, Kay-Lambkin, & Loxton, 2014, p. 5) between the provider and the patient can lead to varying perceptions and interpretations about "safe levels" of alcohol consumption during pregnancy. Anderson and colleagues (2014) found that when women received multiple and conflicting information regarding alcohol use during pregnancy, they created a hierarchy of information, placing health care providers at the top of their hierarchy, and often relying on health care providers to explain these discrepancies. Women not only view their health care provider as a reliable source of information but also believe they hold *expert* knowledge (Anderson et al., 2014).

The lack of knowledge regarding consequences of prenatal alcohol exposure, and conflicting information about potential fetal harm, demonstrated by practicing health care professionals may reflect shortcomings in medical training about alcohol use during pregnancy, more specifically related to the patterns of mental and physical defects caused by in utero exposure to alcohol (Vagnarelli et al., 2011). Consequently, there is a need to investigate students' knowledge and training in this area, so future health care providers are confidently transitioning into clinical practice. However, health care students' attitudes about alcohol use during pregnancy remains largely unexplored. To the authors' knowledge, few studies exist examining medical students' knowledge, awareness, and self-efficacy in relation to FASD (Arnold et al., 2013; Walter & Kerr, 2011), and very limited studies include nurses, nurse practitioners, and nursing students (Brimacombe, Nayeem, Adubato, DeJoseph, & Zimmerman-Bier, 2008; Caley, 2006), or licensed midwives (Crawford-Williams, Steen, Esterman, Fielder, & Mikocka-Walus, 2015a, 2015b; S. C. Jones et al., 2011; Payne et al., 2014). Furthermore, to our knowledge, no studies exist that include midwifery students. The purpose of this study was to understand the attitudes and beliefs of health care students about alcohol use during pregnancy, particularly regarding their views on "safe levels" of alcohol use. Please refer to our companion article (Coons, Watson, Yantzi, Lightfoot, & Larocque, 2017) for a more in-depth discussion of health care students' attitudes, beliefs, and perceptions as they pertain to the divergent recommendations given to different groups of women.

Method

This study is part of a sequential, explanatory mixed-methods project examining health care students' knowledge, attitudes, and self-efficacy regarding FASD. The study included two phases; all students who participated in Phase I of the study (two quantitative questionnaires) were invited to take part in Phase II (semistructured qualitative interviews and scenario-based vignettes). Phase II of the study was informed by social constructionism, understanding that our meaning of the world is not discovered, but rather is constructed based on our dealings with society (Crotty, 1998; Merriam, 2009). Of particular importance to the social constructionism perspective is that different people may construct meaning in different ways, even in relation to the same phenomenon. Students worked through the vignettes, which were designed to address the primary issue of students' attitudes toward alcohol consumption during pregnancy. This article presents the results from the qualitative vignettes.

Participants

After receiving ethics approval from the Laurentian University Research Ethics Board, students in this study were accessed through the Northern Ontario School of Medicine (NOSM), as well as the Midwifery and Primary Care Nurse Practitioner Programs at Laurentian University in Sudbury, Ontario, Canada. Respondent-driven, purposive convenience sampling was used, whereby individuals known to the researchers (e.g., program coordinators, professors, colleagues) were contacted in the hopes of reaching students who would be willing to participate. Students were also accessed through various social media sites, including Facebook and Twitter. Students were directed to an online survey link in Research Electronic Data Capture (REDCap; Harris et al., 2009) hosted at Laurentian University if they were interested in participating in the study. Of the 45 participants who participated in Phase I (the quantitative questionnaires), 21 students indicated their willingness to participate in Phase II. Students who participated in this phase of the study received a CAD$10 Tim Horton's gift card to thank them for their time. Participants included seven undergraduate medicine students, eight midwifery students, and six nurse practitioner students. Further information outlining participant demographics can be found in Table 1. For confidentiality purposes, all participants in this study will be referred to by pseudonyms to protect their identities. Furthermore, in addition to participants' names, any identifying information (e.g., location of practice) has been changed or omitted to maintain participant anonymity.

Vignettes

Participants completed one of three different scenario-based vignettes addressing their *perceived* knowledge and self-efficacy regarding FASD and alcohol consumption during pregnancy,

Table 1. Participant Demographic Characteristics.

Demographic Characteristics	
Characteristics of health care students (*n*)	21
Medical students	7
Lower year (3)	2
Upper year (4)	5
Age (*SD*)	28.71 (6.05)
% female	57.1%
% currently pregnant	0%
Midwifery students	8
Lower year (3)	2
Upper year (4)	6
Age (*SD*)	26.63 (2.83)
% female	87.5%
% currently pregnant	0%
Nurse practitioner students	6
Lower year (1)	3
Upper year (2)	3
Age (*SD*)	33.33 (11.15)
% female	83.3%
% currently pregnant	0%

where scenarios were rotated between interviews and each participant completed one vignette. Each of the three vignettes is included as an appendix at the end of this article.

The vignettes were designed to be as open-ended as possible, with semistructured prompting questions as needed, to elicit thoughtful responses and perceptions about students' attitudes about alcohol use during pregnancy. The vignettes and semistructured interview were conducted at the same time, with students being asked to respond to the vignette prior to the interview questions. Responses to the vignettes lasted between 8 and 15 minutes. Interviews were conducted by the lead researcher and were scheduled at the convenience of participants. All interviews took place at locations agreed upon by both the participant and the interviewer, such as local coffee shops or at the university, or virtually over the phone or via Skype based on participants' choice. Students were e-mailed a copy of the vignette prior to the scheduled interview time (e.g., if the interview was conducted over the phone/via Skype), or were provided with a hard copy of the vignette (e.g., in-person interview), and were asked to read (or listen to the first author read) the vignette at the beginning of the interview. After reviewing the vignette (either Scenario 1, 2, or 3), students were asked to provide their first impressions. Additional prompting questions were used to obtain further responses about health care students' attitudes about alcohol use during pregnancy, their comfort in working with these hypothetical women, and their recommendations for the women in each scenario.

The use of vignettes allowed students to demonstrate their perceived level of knowledge through a clinical application exercise and was instrumental in understanding health care students' existing beliefs and prejudices about FASD, as well as their perceived self-efficacy and ability in applying their knowledge to practical situations. The vignettes were modeled after vignettes created by Reiss and colleagues (Reiss, Levitan, & Szyszko, 1982; Reiss & Szyszko, 1983), were informed by societal issues (e.g., public examples discussing alcohol use during pregnancy, such as Michelle Ruiz's article in *Cosmopolitan, Why I Drank While I Was Pregnant*, and Emily Oster's book, *Expecting Better: Why Conventional Pregnancy Wisdom Is Wrong—and What you Really Need to Know*), and were primarily derived from parental experiences raising children with FASD (Coons, Watson, Schinke, & Yantzi, 2016; Coons, Watson, Yantzi, & Schinke, 2016). The vignettes allowed the researchers to collect information regarding how students would behave in potential "real life" situations, based on the manipulation of variables that would not necessarily be possible in other types of research studies, such as observational research. The vignettes were written and revised several times by the first two authors and were member checked with parents of children with FASD who had participated in previous research (Coons, Watson, Schinke, & Yantzi, 2016; Coons, Watson, Yantzi, & Schinke, 2016) and whose stories informed the written scenarios. Nine parents and caregivers raising children with FASD in Ontario, including biological, adoptive, and foster parents, reviewed the vignettes and approved their content and realism, indicating that the stories presented in the vignettes are an accurate representation of parents' feelings and experiences regarding FASD and alcohol use during pregnancy. In addition to the member check, a pilot test of the vignettes was also conducted with a second-year medical student to ensure the clarity of the scenarios, as well as determine how long the discussion of each vignette may take. No changes were made to the vignettes following the pilot test.

Data Analysis

Braun and Clarke's (2006) thematic analysis approach was used to identify, analyze, and report patterns within the data. This analysis approach is congruent with social constructionism. Interview transcripts were transcribed verbatim and transcripts were read and reread to familiarize the primary researcher with the content of the vignettes, noting initial ideas and comments (e.g., individual words, phrases, and full paragraphs). These initial notes were then used to further code the data in a systematic fashion, organizing data into relevant codes. Coded data were then used to generate potential themes, which were further reviewed and refined into clear themes, where each theme was given a descriptive label taken directly from the words of participants. Member checking was also conducted during the data analysis phase to ensure the themes generated were representative of the participants' experiences (Shenton, 2004). Participants were provided with a summary table of themes to ensure the accuracy of the researchers' interpretations. Participants were

also invited to review their interview transcripts and provide additional feedback.

Results

Although almost all students in this study recognized that no alcohol consumption during pregnancy is the safest clinical recommendation, many students recounted that this advice is not always conveyed during encounters with their pregnant patients. Students in all three groups expressed differing attitudes toward alcohol consumption during pregnancy. Using thematic analysis, three primary themes related to students' attitudes concerning alcohol use during pregnancy were identified: attitudes regarding amount of alcohol consumption and timing of exposure, a professional obligation to inform patients that no alcohol is the safest recommendation, despite no conclusive evidence, and personal choice.

Attitudes Regarding Amount of Alcohol and Timing of Exposure

"So many clients ask if they have 'ruined their babies'": Alcohol exposure before pregnancy identification. Although students, particularly in the midwifery program, emphatically believed that women should not drink alcohol during the first trimester, they were less concerned about alcohol exposure during the second and third trimesters. Sally, a fourth-year midwifery student, and Simon, a fourth-year medical student, both discussed the commonly held belief that women should not consume alcohol during the first trimester. As Simon stated, "Obviously the first trimester is . . . the most sensitive time for the developing fetus." While some students went on to discuss that alcohol exposure can potentially have teratogenic effects at any point in the pregnancy, several students were most concerned about the first trimester and stated that if there was ever a time in pregnancy to abstain, it would be during the early months of a pregnancy.

Despite receiving different vignettes with varying amounts of alcohol consumption, students' responses regarding alcohol consumption during pregnancy were relatively similar for drinking during early pregnancy. Many students also emphasized the risk of drinking before you know you are pregnant, but challenged the idea that a one-time, binge exposure, such as the one presented in Vignette 2, could potentially cause damage. For example, Eva, a fourth-year midwifery student, argued in response to Kimberly's 10-drink binge episode in Vignette 2 that:

> My first impression is that a lot of people drink before they realize that they are pregnant and often times what we say to people is there's this lovely all or nothing effect . . . I wouldn't be concerned about that one incident of drinking and would talk to her about how we encourage . . . officially no alcohol . . . but not to hold on to worries about that one night.

Students noted the delicate balance between advising patients about recommended guidelines and contending with patients' fears that they had "ruined their babies" by drinking before they knew they were pregnant. Students spoke of the need to weigh the risk of anxiety during pregnancy with the potential risks to the baby and often expressed concern for the stress level of the mother if she knew she had drunk before pregnancy recognition. For example, Reece, a fourth-year midwifery student, discussed the importance of supporting moms-to-be who may have consumed alcohol before they knew they were pregnant, such as Vignette 2:

> In the grand scheme of things it wasn't a huge amount of alcohol, she didn't know, and so . . . just keep doing what she's doing and abstaining from alcohol . . . . Tell her she's doing a good job doing what she's doing [now].

Regina, a fourth-year medical student, shared a similar remark and noted that "this is not the first pregnancy that someone might have had drinks during . . . and most of the time we deliver healthy babies."

While some students focused on the perceived risks of alcohol exposure at different times during pregnancy, other students subscribed to a completely abstinence-based approach that started prior to conception. Rebecca, a fourth-year medical student, and Charlotte, a second-year nurse practitioner student, both specified that if trying to get pregnant or if a pregnancy could be occurring at any time, then women "shouldn't be drinking alcohol." For patients who may have already been consuming alcohol, such as in the vignettes, Charlotte went on to say that she "would have advised her, as soon as she would start trying to become pregnant . . . to act as if she was," which included avoiding certain medications, alcohol, smoking, and recreational drug use. Unfortunately, almost all students commonly encountered patients who had consumed alcohol before knowing they were pregnant during their health care training and spoke to the need to acquire more training in this area to be able to confidently discuss the potential risks with their patients.

"At this point, from what she's disclosed, I wouldn't say I'm too worried": Amount of alcohol exposure. Despite identifying the potential negative consequences of alcohol exposure during pregnancy, many students reflected that the amount of alcohol exposure presented in the vignettes was not a cause for concern. Participants often used the phrase that "officially" no alcohol was recommended by the Public Health Agency of Canada and their preceptors, but thought that "some" was likely okay. Students also identified their perception that alcohol exposure likely had a cumulative effect over the duration of the pregnancy and expressed a desire for an established threshold that they could use to discuss alcohol use with their pregnant patients. Consequently, they had a hard time "definitively" saying that any amount of alcohol would be dangerous during a pregnancy.

Participants were aware that binge drinking is never recommended, but were much more uncertain of the potential effects when it came to "light" or "moderate" levels of alcohol exposure, or one-time binge exposures. For example, Eva, a fourth-year midwifery student, identified that the binge exposure in Vignette 2, which included 10 drinks on one occasion early in the first trimester, would "not [be] enough that I'd really be red flagging it." Similarly, Reece, also a fourth-year midwifery student, believed that the amount of alcohol consumption presented in the same vignette was not substantial enough to potentially cause FASD: "I don't know that that amount of alcohol consumption . . . I don't think we would even talk about FASD and monitoring for that as the child grows up." Layla, a third-year medical student, also shared her uncertainty regarding the potential outcomes associated with alcohol use in her response to Vignette 3, which included occasional exposure to alcohol:

> My understanding is that there may be some consequences to her baby when it's born. It could have issues related to FASD, whether they're cognitive or behavioral, social, physical issues, they're all possible. But just because she did drink, that doesn't necessarily mean that that's going to happen.

Interestingly, students who received the vignette in which the family doctor advised a pregnant patient to consume alcohol were outright shocked and expressed anger at such a recommendation. For example, Jacqueline, a fourth-year midwifery student, argued that the doctor's guidance was "horrible advice" and that she didn't know "where the doctor is getting that advice from." Other students, such as Rebecca, a fourth-year medical student, believed that this doctor should "lose their medical license" because the doctor was not "giving appropriate medical advice," and Mindy, a first-year nurse practitioner student, even believed that the doctor "could be charged for malpractice." These attitudes were in stark contrast to students' viewpoints and recommendations that surrounded "light" or "moderate" drinking.

Obligation, But No Conclusive Evidence

"Obligation to inform that no alcohol is best": Responsibility to talk to patients. In regard to alcohol consumption, participants stressed that they are duty bound by their professional obligations (e.g., responsibility to their regulatory bodies) to inform their patients that no alcohol is the best and safest recommendation, but it can be difficult for health care providers to relay a clear directive to their patients if there is no well-defined consensus about the message and the available research findings.

While the first theme demonstrates that students may have specific deficits in certain areas (e.g., knowledge of the impact of exposure during different trimesters, lack of awareness of the outcomes associated with varying amounts of alcohol consumption), this theme demonstrates that students are significantly more resistant to outright stating that small amounts of alcohol exposure can cause fetal damage. Many students expressed their disbelief regarding the necessity of total abstinence during pregnancy, and referred to alcohol use as a "technical" or "theoretical" risk. For example, Alina, a second-year nurse practitioner student, elaborated that the woman presented in Vignette 1 was "right that there are no . . . technical studies, [that] you drink this much alcohol, your baby will turn out this way." Almost every student voiced his or her belief that there is a lack of "clear," "conclusive," or "concrete" evidence regarding varying levels of alcohol consumption during pregnancy and identified that the women in the vignettes were "right in the fact that there is no conclusive evidence."

Despite agreement regarding the lack of existing academic consensus, participants were divided regarding their attitudes and recommendations toward "light" drinking, with some students arguing that some alcohol use was likely okay, and other students maintaining that abstinence was the more prudent choice. For example, Braden stated:

> She made a comment that there's no . . . evidence that light drinking during pregnancy will harm her baby. That's maybe a little bit of a tough thing to argue but there's certainly no conclusive evidence that there is any safe level to it and so I think that it's important to emphasize that there is not any sort of established safe level . . . there's always that risk that what she's doing is harming the child.

Other students, such as Rebecca, a fourth-year medical student, and Josh, a second-year nurse practitioner student, took a firmer stance and maintained that their pregnant patients should "100% [abstain]" and "absolutely refrain from drinking alcohol" because "no amount of alcohol is ever safe for a woman when she is drinking during her pregnancy." Students emphasized their anxiety and apprehension about maintaining their professional responsibilities (e.g., obligation to counsel around alcohol abstinence) and their individual attitudes about alcohol use during pregnancy.

"If we don't know what the risks are, people aren't making informed choices": Knowledge of potential risks. Because of their disbelief that small amounts of alcohol consumption during pregnancy may cause FASD, some students, such as Phillip, a fourth-year medical student, also contended that a threshold level may not exist because "fetal alcohol effects are not an all or nothing thing where there's some threshold level you go over." Despite their professional obligations, students discussed their bewilderment with regard to counseling patients if they themselves were not accurately informed about the potential risks. Students noted the uncertain nature of the existing body of literature, indicating that "the impacts aren't fully known, so it's better to just stay on the safe side and not drink" because the effects are likely different for each individual woman. Furthermore, students

expressed confusion over what the terms *occasional* or *lightly* meant and Grace, a fourth-year midwifery student, for example, noted the importance of having a discussion and clarifying with patients "how many drinks she has and how big the beer is and how big the glass of wine is to see how much, in the measurement form, she is in-taking." Grace further remarked that "excessive" alcohol use during pregnancy "is bad, but what does excessive mean," indicating the importance of quantifying and precisely measuring how much alcohol their patients may be consuming.

As a consequence of this confusion, students expressed difficulty in judging the potential risks of alcohol consumption during pregnancy, especially regarding social drinking, occasional drinking, or a one-occasion episode of drinking (e.g., multiple drinks in one sitting). As Braden stated, "We're not gonna pass a law that says moms aren't allowed to drink alcohol, but we can give them information about the risks. But the trouble is we're giving them vague information about risks." He further elaborated that problems can arise if health care providers are not informed about the potential risks because they are not presenting their patients with the information required to make "informed choices" about their pregnancy.

Therefore, participants noted the importance of obtaining credible information to support their patients in making an informed decision about their pregnancy, as well as in accurately determining the potential risks to their patients and their babies. Sally, a fourth-year midwifery student, recommended offering patients the best evidence possible, including recommendations from the Public Health Agency of Canada and Health Canada: "I would first of all always preface with the Health Canada recommendation which is that there's no safe time in pregnancy to drink alcohol and that there's no amount of alcohol that is considered safe." Other students, such as Mackenzie, a fourth-year midwifery student, stressed the importance of accessing "good research" to inform their health care practices, as well as provide accurate information for patients. As she elaborated, "I actually don't know if there is a Cochrane review, I'm sure there is. Things like that, studies and reviews of other studies." Therefore, students highlighted the need to obtain trustworthy information to address their confusion regarding alcohol consumption during pregnancy.

Personal Choice

"As long as she's informed . . . she can make her own choice": Respecting the mother. A common thread throughout both main themes previously presented was the belief that, ultimately, the decision to consume alcohol during pregnancy was the sole, personal, and individual choice of the pregnant woman. This attitude was most notably present in midwifery students, compared with the medical and nurse practitioner students. Only one second-year nurse practitioner student, Alina, discussed the personal choice aspect, noting that "it's up to [the pregnant woman]. It's her decision ultimately."

Almost every single midwifery student elaborated on his or her unique approach to care, accentuating that midwives are present to directly support the mother. Several midwifery students, such as Sally, Mackenzie, and Grace, discussed their approach to care and stressed that individual choice is a critical part of their professional role. The discussion of choice was exceptionally important when it came to students' conflicting attitudes surrounding light drinking during pregnancy. As Sally elaborated:

> If you preface with public health information you can pretty much say "as a health care provider, I'm required to say X-Y-Z" . . . Especially from the midwifery angle, talk about choice. So here is the guideline and of course your pregnancy is your choice. Your lifestyle, your choice.

Mackenzie, who responded to Vignette 1, highlighting occasional and light alcohol use during pregnancy, also again called to attention the lack of clear research about a safe level of alcohol consumption during pregnancy and how this influenced her attitudes about individual choice during pregnancy:

> She's right that there's not . . . a ton of conclusive research about how much alcohol is safe or unsafe and I feel that it's her decision to make so . . . I feel pretty comfortable about the situation overall.

Many midwifery students emphasized that the ultimate decision about how much alcohol to consume lay with the pregnant woman because it was up to her to establish how much alcohol is "acceptable." Because of the perceived "unknown impacts" that alcohol can have, the midwifery students outlined that they would "respect" a woman's choice when it came to light drinking and would always finish off their professional counseling by stating that it is always the woman's decision in terms of how much alcohol she wants to consume and what is tolerable to her during her pregnancy.

Discussion

The authors of this qualitative study found that, when presented with scenario-based vignettes, health care students express conflicting attitudes about the safety associated with alcohol use during pregnancy. Previous qualitative interviews with health care professionals indicate that providers have varying perceptions of harm, depending on timing of exposure and quantity of alcohol consumed (Crawford-Williams et al., 2015a). All participants in this study believed that small amounts of alcohol, such as an occasional glass of wine, were unlikely to cause harm. Some participants in this study also indicated that alcohol consumed later in pregnancy was less likely to cause harm than if consumed in the first trimester. Despite demonstrated knowledge that abstinence from alcohol

during pregnancy is the most prudent and safest choice, some health care students were unwilling to recommend complete abstinence based on the perceived lack of clear evidence associated with light or moderate drinking. This finding is not surprising, given the ongoing debate in the literature regarding a potential threshold effect, below which there is no harm to a developing fetus, and the question of adequate evidence to conclude a safe level of alcohol consumption (O'Leary & Bower, 2012). Research findings regarding the levels of alcohol consumption that cause harm have been limited and conflicting (Henderson, Gray, & Brocklehurst, 2007). While overall research findings have suggested that there is no strong evidence implicating low levels of prenatal alcohol exposure with fetal harm (O'Leary & Bower, 2012), recent studies have demonstrated an increased risk (e.g., adjusted odds ratio [a*OR*] 2.24 of increased anxiety/depression; higher risks for mental health problems, particularly hyperactivity and inattention) of neurodevelopmental challenges (O'Leary et al., 2010; Sayal et al., 2009) and preterm birth (O'Leary, Nassar, Kurinczuk, & Bower, 2009) following in utero exposure to lower doses of alcohol. However, it is essential to note that a lack of clear evidence does not equate to a confirmation of safety (K. L. Jones, Chambers, Hill, Hull, & Riley, 2006) and the sensitivity of the fetus to alcohol may vary depending on a number of factors including the dose, pattern, and timing of exposure, making it impossible to estimate the overall risk of any potential effect. This critical point needs to be reiterated to health care students in training and practicing health professionals. It is important that providers are informing women and their partners that there is no safe level of alcohol use during pregnancy, as advice allowing for one or two drinks on special occasions, or accepting infrequent alcohol use, can lead to confusing and conflicting messages for pregnant women.

Students expressed significant anger and resentment to the vignette in which a health care provider directly recommended alcohol use during pregnancy as a coping mechanism for stress. Students' reactions to this particular vignette differed significantly from students who were presented with the other two vignettes, who were more accepting of alcohol use during pregnancy, especially in lower amounts or in infrequent binges. This finding may indicate a level of cognitive dissonance between students' beliefs regarding safe levels of alcohol exposure, at different times and amounts during pregnancy, compared with an outright recommendation to drink. However, the differing attitudes across groups noted in this study are similar to current research conclusions indicating that some health care provider groups, such as midwives, may still recommend that alcohol can be used to relieve stress for the mother (Crawford-Williams et al., 2015b). In addition, research findings suggest that midwives may also hold the belief that this perceived stress relief may outweigh any risk of harm to the baby and may actually have positive benefits (Crawford-Williams et al., 2015b). Women who are feeling anxious and stressed need to be clearly informed of the potential risks that alcohol may pose to the fetus and mothers-to-be need to be provided with adequate support to help them cope with their pregnancies. Abstinence messages should be balanced, nonjudgmental, and should present the argument of "do no harm" to help avoid the initiation of further apprehension and strain in the pregnant mother. As the students in this study identified, women need to be provided with alternative strategies to manage any worry and tension regarding their pregnancy.

There is also a need for health care providers to deliver supportive care to women who may have consumed alcohol before knowing they were pregnant. Providing strictly abstinence-based advice during patient interactions may cause pregnant women to develop feelings of guilt or anxiety when unintentionally having consumed alcohol while pregnant (France et al., 2010; van der Wulp, Hoving, & de Vries, 2013). The reality is that many pregnancies are exposed to alcohol prior to pregnancy identification and, for some, the level of exposure may be very high (O'Leary & Bower, 2012), as was presented in Vignette 2. Women often continue their usual pattern of alcohol consumption into the early weeks of an unplanned pregnancy (K. L. Jones et al., 2006). Worldwide, the rate of unintended pregnancies is approximately 44% (Sedgh, Singh, & Hussain, 2014). However, this rate is significantly higher in Canada and the United States, with 51% of pregnancies being unintended (Sedgh et al., 2014). Canadian statistics reveal that the rate of heavy drinking in women is on the rise across the country. Previously defined as consuming five or more drinks per occasion at least 12 times a year, rates of heavy drinking in women have increased from 9.6% in 2008 (Statistics Canada, 2011a), to 9.9% in 2009 (Statistics Canada, 2011b), to 10.1% in 2010 (Statistics Canada, 2011c). Canadian statistics from 2013, which included a definition change to describe heavy drinking as consuming four or more drinks per occasion, now place heavy drinking in women at 13.4% (Statistics Canada, 2015). Among women who may become pregnant, the Centers for Disease Control and Prevention (CDC) revealed that 52.4% of women said they wanted to become pregnant, 54.9% reported using alcohol, and 12.4% reported binge drinking (Centers for Disease Control and Prevention, 2004, 2009). It is essential for health care providers to be knowledgeable that FASD can, and does, occur in children born to any woman who drinks alcohol during pregnancy (K. L. Jones et al., 2006) and women should be informed about these risks prior to conception. Pregnant women and their partners do have a desire to receive information on the consequences of alcohol use for the fetus, on safe amounts of alcohol in pregnancy, and the mechanisms of harm because of prenatal alcohol use (van der Wulp et al., 2013). However, health care students do not feel adequately prepared to provide this information. Consequently, students are not providing proactive advice, but rather reactive and spontaneous advice, when patients admit to alcohol consumption during pregnancy.

Health care students in this study, particularly the midwifery students, also highlighted the significance of personal

choice when it comes to alcohol use during pregnancy. Students discussed that the pregnant woman is responsible for her individual choices during pregnancy, which includes an evaluation of the potential risks (Crawford-Williams et al., 2015b) and an "informed choice" to consume alcohol. There is an important level of trust and responsibility at play between the health care provider and his or her patient; women must be trusted to make their own decisions, but at the same time are accountable for the outcomes of their own decisions. However, this discrepancy presents a unique moral and ethical dilemma, given that it is not the pregnant woman who bears the long-term implications of drinking during pregnancy, but rather the child who experiences the potential consequences. As Crawford-Williams and colleagues (2015b) discuss, the perception that it can be a truly personal choice conflicts with the consequences as it is the developing baby who is the most affected by the decision to drink and is an individual who has no say in the decision to do so. This unique ethical dilemma presents a contentious point of discussion, especially for the midwifery participants, given the scope of their practice and emphasis on providing care for the pregnant mother.

There is also considerable discussion in the literature regarding the presentation of the message to pregnant women about alcohol use during pregnancy (France et al., 2014; France et al., 2013; France et al., 2010). In one study, women knew that abstinence from alcohol was recommended during pregnancy, but were skeptical about the risk associated with low to moderate amounts (France et al., 2013). Research findings indicate that if the message is delivered in a way that is perceived to be honest, factual, and supportive of women making informed choices about their behaviors during pregnancy, the message is likely to be accepted and persuasive (France et al., 2014; France et al., 2013). Women may accept the message as being more credible if health care providers are honest about the ambiguity of the research evidence and present a clear rationale for their recommendations. Therefore, the message presented to women should be delivered in a way that is perceived to be realistic and supportive, providing a clear justification for why health care providers are recommending alcohol abstinence during pregnancy. It is possible that the health care students in this study are not fully informed about the reasoning behind the existing Canadian guidelines, or, similar to other studies, they may not realize that the potential risks may be distinctive for different women (Crawford-Williams et al., 2015a).

Similar to the findings of other studies focusing on FASD prevention and health care professionals' attitudes about alcohol use (France et al., 2010; Mengel, Searight, & Cook, 2006; Tough, Tofflemire, Clarke, & Newburn-Cook, 2006; Tsai, Floyd, Green, & Boyle, 2007), the results of this study indicate that prevention efforts would be enriched by health care professionals routinely asking all women of childbearing age about their alcohol use, both before and during pregnancy (McDonald et al., 2014; Poole, Schmidt, Green, & Hemsing, 2016). Students should be encouraged to provide clear and consistent recommendations to all pregnant women and women of childbearing age about the risks associated with prenatal exposure to alcohol. Students should also engage in critical self-reflection as they may not realize the extent to which their own personal attitudes and beliefs influence their clinical practices. Students need to be actively mindful of how their own opinions and viewpoints may affect their recommendations to patients, and the manner in which they speak about various topics, including alcohol use during pregnancy. It is important that students are cognizant of how they present the existing evidence to their patients as their own interpretations of the potential risks may bias patients and their partners and could hinder patients from making informed choices about their pregnancies (Crawford-Williams et al., 2015a).

Strengths and Limitations

Although this study addressed health care students' attitudes toward alcohol use during pregnancy, research findings may be affected by some limitations, including a potential for response bias to the vignettes. While vignettes were rotated between interviews and between health care student groups, it was impossible to eliminate any potential biases or skewed responses based on the content of each individual vignette. Given the topic and the considerable debate regarding safe levels of alcohol consumption during pregnancy, it is also possible that students felt the need to respond in a socially desirable way. However, students were encouraged to divulge their own personal feelings and attitudes in an atmosphere of acceptance and nonjudgmental listening. Students were prompted to provide honest and true responses in an environment that was supportive of differing viewpoints regarding the safety of alcohol use during pregnancy. Based on the range of responses and differing attitudes revealed by students, it is unlikely that this was a significant issue in this study.

Furthermore, vignettes are an effective technique for exploring people's perceptions, beliefs, and meanings about a particular situation (Spalding & Phillips, 2007). The use of vignettes in this study provided a unique approach to data collection and supplied an opportunity for knowledge mobilization to occur immediately, as students reflected on the various situations, FASD, and their formal education, while they responded to the case-based scenarios. The use of vignettes also provides a novel opportunity for curricula changes based on the findings of this study as the vignettes can be updated and integrated into the program curricula. Vignettes are typically used in conjunction with other research techniques; while the results of this phase of the study focus on the vignettes alone, the results can and should be compared with results from the larger study (e.g., interview findings, questionnaire findings) and other research projects in this field. However, the use of vignettes in this

study provides a unique and novel approach to data collection around FASD and alcohol use during pregnancy.

It is also important to note that the participant-selecting bias presented in qualitative research means that the students in this study were the most interested and concerned about FASD in clinical practice. While their statements show confusion and apprehension, it is likely that there are other students with even less certainty about their practice.

Conclusion

The findings of this study demonstrate a need for improving the quality and consistency of information provided to pregnant women about alcohol consumption, as well as improving communication between women and their future health care providers. The findings of this study also establish a need to provide students with further information and education regarding the risks of alcohol consumption during pregnancy and the potential implications of prenatal alcohol exposure (i.e., FASD).

Appendix

Vignette 1

Shannon is a 32-year-old, married woman who is pregnant with her first child. Shannon has a bachelor's degree in labor studies and communications from an Ontario university and works as a marketing consultant at a top marketing firm in Toronto, Ontario. Shannon has a very active social life and has a weekly dinner date after work with five of her closest female friends.

Shannon is currently 7 months pregnant. While Shannon did not drink at all during her first trimester, she drank occasionally and lightly throughout her second and third trimesters. Shannon has never binge drunk or gotten drunk and has never had any hard liquor during her pregnancy. She says that she often has a glass or two of wine or a couple beers per week. Shannon's friends frequently reassure her that having a few drinks during her pregnancy does not pose any risk to her baby.

While Shannon claims that she could go the 9 months without drinking any alcohol, she believes there is no conclusive evidence that light drinking during pregnancy will harm her baby. Shannon feels as though keeping as much of her normal, nonpregnant life as possible is benefiting her physically and mentally, including consuming a few drinks with her friends at dinner or when celebrating important events.

Questions

- What are your first impressions of this vignette?
- As a health care professional, what advice would you give to Shannon at this stage of her pregnancy (third trimester)? What advice would you have given to Shannon at the beginning of her pregnancy?
- Do you think what Shannon is doing during her pregnancy poses any risk to her unborn child? Why or why not?
- How comfortable do you feel addressing this situation?

Vignette 2

Kimberly is a 23-year-old, unmarried woman who is pregnant for the first time. Kimberly lives in a small, rural community in northern Ontario that is 2 hours from the closest urban center. Kimberly owns her own car, but commuting is often problematic due to her erratic work hours and weather in the wintertime.

Kimberly is currently 5 months pregnant. Kimberly found out she was pregnant at 8 weeks. Even though Kimberly rarely drinks, she stopped drinking completely upon finding out she was pregnant. However, Kimberly attended a friend's birthday party before she discovered she was pregnant and recalls drinking about 10 drinks on that occasion, during her third week of pregnancy.

Kimberly has a strong social support network around her, particularly from her friends and her mother who still lives in the same community. However, Kimberly's partner and the father of her child continues to drink in front of her, even though Kimberly has requested that he not drink. In certain social situations, her partner has urged her to have a couple drinks to help her relax and have fun. In these instances, Kimberly has chosen to drink a nonalcoholic cocktail or a nonalcoholic glass of wine instead of an alcoholic beverage.

Questions

- What are your first impressions of this vignette?
- As a health care professional, what advice would you give to Kimberly at this stage of her pregnancy (second trimester)? What advice would you have given to Kimberly before she became pregnant?
- Do you think what Kimberly did at the beginning of her pregnancy poses any risks to her unborn child? Why or why not?
- How comfortable do you feel addressing this situation?

Vignette 3

Jessica is a 30-year-old, married woman who is pregnant for the first time. Jessica obtained a bachelor of arts degree in English and a bachelor of education from a southern Ontario university. While Jessica has lived in a major urban center for several years, she has recently moved back to her home community in a small, rural town in southern Ontario to accept a teaching position.

Jessica is currently 3 months pregnant. When Jessica made an appointment to see her family doctor, she expressed some concern and anxiety about her pregnancy. Because this is Jessica's first pregnancy, she is worried and uncertain about what to expect. Her doctor reassured her that everything was fine and that if she was really worried she should have a few drinks to help her relax and to get a better sleep. Although Jessica never drinks alcohol, she accepted the doctor's advice.

Questions

- What are your first impressions of this vignette?
- As a health care professional, what advice would you give to Jessica at this stage of her pregnancy (first trimester)? What advice would you have given to Jessica before she became pregnant?
- Do you think the advice the family doctor gave Jessica poses any risk to her unborn child? Why or why not?
- How comfortable do you feel addressing this situation?

Authors' Note

Ethics approval was received from the Laurentian University Ethics Board and is in line with the Canadian Tri-Council Recommendations for Research with Human Participants. The views expressed in this article are the views of the authors and do not necessarily reflect those of the Ministry of Health and Long-Term Care.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research has been funded by an Ontario Women's Health Scholars Award. The Ontario Women's Health Scholars Award is funded by the Ministry of Health and Long-Term Care. This research has been funded by the Canadian Institutes of Health Research (CIHR) Strategic Training Program in Public Health and the Agricultural Rural Ecosystem (PHARE), and Partner Institutes including the Institute of Health Services and Policy Research, Institute of Circulatory and Respiratory Health, Institute of Infection and Immunity, and the Institute of Population and Public Health. This research has also been funded by an Ontario Graduate Scholarship.

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Author Biographies

Kelly D. Coons, PhD(c), MA, is a doctoral candidate in the Interdisciplinary Rural and Northern Health program at Laurentian University, Sudbury, ON, Canada.

Shelley L. Watson, PhD, is an associate professor in the Department of Psychology at Laurentian University, Sudbury, ON, Canada.

Nicole M. Yantzi, PhD, is an associate professor in the School of the Environment at Laurentian University, Sudbury, ON, Canada.

Nancy E. Lightfoot, PhD, is an associate professor in the School of Rural and Northern Health at Laurentian University, Sudbury, ON, Canada.

Sylvie Larocque, PhD, MSc (infirmière), BScN, is an associate professor in the School of Nursing at Laurentian University, Sudbury, ON, Canada.