

Pregnancy and Alcohol Use: What OB-GYNs Know, Believe, and Do About It

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The US Department of Health and Human Services reports that every year over 80% of childbearing aged women (15-44) who do not use birth control become pregnant and even with birth control, three out of 100 will. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) report that 40% of women do not know they are pregnant until 4 to 7 weeks into the pregnancy and 50% of women who are of childbearing age drink alcohol. The CDC reports that while most women reduce alcohol consumption after learning they are pregnant, 12% continue to use alcohol during pregnancy. The purpose of this formative research was to survey the knowledge, attitudes and beliefs of Obstetrician-Gynecologists (OB-GYNs) regarding pregnancy and alcohol use. Using a cross-sectional survey design, data were collected using a 17-item anonymous questionnaire mailed to all OB-GYNs who are members of the Kentucky Medical Association. Questions were asked on demographic characteristics, knowledge about alcohol use during pregnancy, barriers to screening for alcohol use with prenatal patients, educating patients about alcohol use during pregnancy and preferred continuing education format. More than a fourth (28%) of respondents reported that an occasional glass of wine would not cause harm and of that percentage, 81% were male OB-GYN providers. A crucial finding was that 85% of respondents reported that it is not easy to identify a patient with an alcohol abuse problem. Significantly, the majority (80%) reported that the greatest barrier to effective screening for alcohol use during pregnancy is the patients themselves who they believe are dishonest about their use. Considering these results and the perceived barriers, it is important to continue to educate OB-GYNs in Kentucky about alcohol use in

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pregnancy. Further research needs to be done to help OB-GYNs overcome the perceived barriers that prevent them from providing appropriate care and counsel on this specific issue.

Exposure to ethanol during pregnancy can result in a range of physical and developmental anomalies called fetal alcohol spectrum disorders (FASD).¹ FASD is the leading preventable cause of mental retardation and developmental disabilities in the United States. Fetal alcohol syndrome (FAS) is on the more involved end of that spectrum and encompasses the facial, growth, and central nervous system abnormalities seen in children with prenatal alcohol exposure.² In the United States alone, half a million women report drinking alcohol during pregnancy, with nearly one in five of those admitting to binge

PERCEPTIONS OF PREGNANCY AND ALCOHOL USE

drinking each year.³ The prevalence rate in pregnancy in the U.S. is nearly 13% for any consumption and 6% for frequent and binge drinking.⁴

Because of the high prevalence of FAS, there is a need for obstetrician-gynecologists (OB-GYNs) to be trained in FAS prevention, diagnosis, and treatment.⁵ There are adverse outcomes associated with prenatal alcohol exposure that research now clearly documents.⁴ The American College of Obstetricians and Gynecologists (ACOG) have, for many years, recommended alcohol abstinence for both pregnant and pre-conceptional woman, on the basis that no safe threshold for consumption has been identified.⁶ Alcohol risk assessment, however, may be perceived as difficult, time consuming, and uncomfortable.⁷

In the Diekman et al⁷ study, it was found that almost all obstetrician-gynecologists ask their patients about substance use at least once during their pregnancy, usually at the initial visit. Those findings were similar to results of previous studies.^{8,9} Diekman et al,⁷ also found that in addition to asking their patients about alcohol use, 90% of the OB-GYNs indicated that when prenatal drinking was reported, they asked further questions to determine the extent of the drinking, a finding that has not always been reported in other studies.

There were, however, disappointing findings on the incidence of alcohol screening. Only one-in-ten respondents in their survey reported using a screening questionnaire, with the most popular being the CAGE¹⁰ and not the TWEAK,¹¹ which is what we now know to be the best screening tool available to access childbearing-age women.¹² OB-GYNs reported that they were more likely to discuss the adverse effects of alcohol use with pregnant women and advise abstinence among those who were reported heavily drinking than moderately drinking, which is consistent with other research studies.^{13,14}

Diekman et al's⁷ study found that OB-GYNs who graduated from medical school before 1989, were more likely to report uncertainty regarding alcohol thresholds associated with selected adverse pregnancy effects or to regard higher consumption levels

to be without risk of these outcomes. The barriers to practice identified in their study were consistent with other studies^{11,13, 14} and included time limitations, patient sensitivity, need for information, and additional training.

The purpose of this study is to examine knowledge, attitudes, current clinical practices, and educational needs of OB-GYNs regarding patients' alcohol use during pregnancy. A secondary goal is to compare some of our findings with those received ten years ago from the Diekman et al⁷ study. We would like to know if knowledge, beliefs, and practice behaviors have changed over the past decade.

Many federally funded agencies have come into existence within the last ten years that have promoted awareness of the risk and dangers of prenatal drinking. There has been an expansion of knowledge base about the spectrum of effects of prenatal alcohol exposure, from minor facial features and growth deficits to abnormalities in neurological or neurobehavioral functioning. The research has consistently supported that a child does not have to be diagnosed with full FAS in order to have learning and behavior problems. We need to know if this awareness of the spectrum of effects of prenatal alcohol exposure is helping guide practitioners' attitudes and practices when it comes to asking pregnant women about alcohol use in pregnancy and whether this helps them counsel about abstinence from alcohol use for the nine months of pregnancy.

MATERIALS AND METHODS

The University of Louisville Fetal Alcohol Spectrum Disorders Clinic at the Weisskopf Child Evaluation Center, in conjunction with staff of the Bluegrass Prevention Center in Louisville, Kentucky, conducted this study from January to July of 2009. Using a cross-sectional survey design, data were collected using a 17-item anonymous questionnaire mailed to 400 OB-GYNs who are members of the Kentucky Medical Association. Additionally, there was an opportunity to reply via survey monkey to an announcement about this study posted in the Kentucky Medical Association (KMA) newsletter.

Questionnaire

The questionnaire was modified from surveys developed by earlier researchers to evaluate provider knowledge and awareness of FASD.^{15,14} Each question consisted of varying response options depending on question content for multiple-choice Likert-type scales, and free-text entries. Questions were asked on demographic characteristics, knowledge about alcohol use during pregnancy, barriers to discussing alcohol use with prenatal patients, educating patients about alcohol use during pregnancy and methods for continuing education on topics related to their field. Questions were intentionally limited to 17 (one page) to encourage participation and completion. The time required to complete the entire survey was estimated to be 5 minutes. Of a total of 400 surveys distributed, 112 were returned, for a response rate of 28%.

Ethical considerations

The survey was directed by the investigator from the University of Louisville Fetal Alcohol Spectrum Disorders Clinic and project coordinator and staff from the Bluegrass Prevention Center. Participation in the survey was voluntary and anonymous. The study was approved by the Institutional Review Board of the University of Louisville.

Statistical analysis

Manual data entry was carried out by staff of the Bluegrass Prevention Center. Data was converted from an Excel data management file into SPSS (Version 19) for statistical analyses by the Southeastern FASD Regional Training Center. Comparisons between groups of respondents (eg, gender, location, and years of practice) were made in terms of responses using chi-square tests. The level of significance was set at a P value of less than .05.

RESULTS

Approximately 61% of respondents were male and 39% female. OB-GYNs practicing in rural areas encompassed 37% of the sample. A

little more than half (57.1%) of the OB-GYNs reported practicing over 20 years.

Knowledge and beliefs

A set of questions was included in the survey instrument to assess provider knowledge of FAS/FASD (Table 1). Across groups, about two-thirds (67%) reported that there is no safe amount of alcohol intake during pregnancy. A significant gender difference was found on knowledge about the safe limit of alcohol during pregnancy. Approximately 86% of females versus 56% of males report that there is no safe amount of alcohol during pregnancy ($p < .05$). Approximately 28% of the OB-GYN's reported that an occasional glass of wine would not cause harm, and, of that percentage, 81% were men. More concerning was the finding that approximately 46% of OB-GYN's practicing less than 10 years reported that an occasional glass of wine would not cause harm. A significant gender difference was found on the safest time for a pregnant woman to drink alcohol (Table 6, Question 17). Approximately 27% of males reported that drinking during pregnancy was safe or that they were not sure if it would cause harm, compared to a much lower rate of females (11%). It was found that among OB-GYN's practicing less than 10 years, approximately 17% believed that it was okay to consume alcohol during the third trimester and 8% were not sure. Similar findings were found among OB-GYN's practicing 20+ years. Approximately 11% believed that consuming alcohol was okay at any time during pregnancy or at least during the third trimester, and 13% were not sure. Interestingly, among OB-GYN's practicing between 10-19 years, 92% of them reported that no time was safe for a women to drink alcohol compared to about 75% in practitioners who are less than 10 years in practice and those who are 20+ years in practice.

FAS diagnostic experience

A set of questions was included in the survey instrument to assess FAS diagnostic experience (Table 2). A crucial finding was that 85% of respondents reported that it is not easy to identify a patient with an alcohol abuse

PERCEPTIONS OF PREGNANCY AND ALCOHOL USE

Table 1. Knowledge and Beliefs of OB-GYN Providers About Alcohol Use in Pregnancy

	All (n=112)	Males (n=68)	Females (n=44)	Rural (n=39)	Urban (n=66)	Less than 10 Practice (n=24)	10-19 Years Practice (n=24)	20+ Years Practice (n=64)
In your opinion, how much alcohol is safe for a pregnant woman to drink?								
Absolutely none	67.9%	55.9%	86.4%	59.0%	74.2%	54.2%	83.3%	67.2%
An occasional glass of wine will not cause harm	27.7%	36.8%	13.6%	38.5%	19.7%	45.8%	16.7%	25.0%
A couple of drinks each week will not cause harm	3.6%	5.9%	.0%	2.6%	4.5%	.0%	.0%	6.3%
As long as she doesn't get drunk, alcohol won't cause harm	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
As long as she doesn't get drunk regularly, alcohol won't cause harm	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
Not sure	.9%	1.5%	.0%	.0%	1.5%	.0%	.0%	1.6%
In your opinion, when is the safest time for a pregnant woman to drink alcohol?								
It's ok if she drinks during the first trimester	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
It's ok if she drinks during the second trimester	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%
It's ok if she drinks during the third trimester	6.3%	7.4%	4.5%	5.1%	7.6%	16.7%	.0%	4.7%
No time is safe	79.5%	73.5%	88.6%	82.1%	78.8%	75.0%	91.7%	76.6%
It's safe for her to drink any time during pregnancy	4.5%	7.4%	.0%	5.1%	4.5%	.0%	4.2%	6.3%

Table 2. Identification of Individuals with Alcohol Abuse Problem: Experience of OB-GYN Providers in Kentucky

It is easy for me to identify a patient with an alcohol abuse problem.	Male (n=68)	Female (n=44)	Rural (n=39)	Urban (n=66)	Less than 10 Years (n=24)	Between 10-19 Years (n=24)	20+ Years (n=64)
Strongly Agree	7.4%	.0%	2.6%	3.0%	.0%	.0%	7.8%
Agree	13.2%	6.8%	17.9%	7.6%	8.3%	16.7%	9.4%
Disagree	52.9%	72.7%	56.4%	68.2%	70.8%	66.7%	54.7%
Strongly Disagree	26.5%	20.5%	23.1%	21.2%	20.8%	16.7%	28.1%
Not Sure	.0%	.0%	.0%	.0%	.0%	.0%	.0%

problem. When the survey question is examined by gender, location and years of practice experience, 21% of males feel more confident than women (7%) of identifying a patient with an alcohol abuse problem; however this difference was not found to be significant ($p=.094$). Of OB-GYN's practicing in rural areas, 21% report being confident as opposed to 11% of those in urban areas. In regards

to practice experience, only 8% of OB-GYN's practicing less than 10 years reported having confidence in identifying a patient with an alcohol abuse problem. There was some difference in ability in those who had more years of practice; however the difference was not statistically significant. Approximately 17% of both OB-GYN's practicing between 10-19 and 20+ years, reported confidence. Rural, male

Table 3. Clinical Behavior and Attitudes of OB-GYN Providers in Kentucky

In your practice, what best describes your method of providing information about:	All Patients Receive Information	Only Those with Risk Factors Receive Information	No patients receive information
4. Alcohol and Pregnancy	83.3%	13.9%	2.8%
5. Tobacco and pregnancy?	40.6%	53.1%	6.3%
6. Prescription/non-prescription drug abuse and pregnancy?	86.1%	13.0%	.0%

PERCEPTIONS OF PREGNANCY AND ALCOHOL USE

OB-GYN practitioners appear to feel more confident in their ability to identify a patient with an alcohol abuse problem.

Clinical behavior and attitudes

A set of questions was included in the survey instrument to assess clinical behavior and attitudes (Table 3). An encouraging finding was that approximately 83% of participants reported that they provide some form of information to all patients about alcohol use during pregnancy while 14% only do so with patients with perceived risk. Even if 85% of OB-GYN's report that it is not easy to identify a patient with an alcohol abuse problem, most OB-GYNs report giving all patients information about the risk of prenatal drinking whether they were identified as having an alcohol abuse problem or not. A significant finding was found in regards to years of practice.

Ninety-six percent of OB-GYN's practicing between 10-19 years provided information about alcohol and pregnancy and 89% of those with 20+ years of practice did as well. The rate, however, dropped for those practicing less than 10 years to 59% ($p < .05$).

Barriers to effective screening

A set of questions was included in the survey instrument to assess barriers to effective screening (Table 4). It was found that 80% reported that the number one barrier to effective screening for alcohol use during pregnancy was the patient not being truthful about alcohol intake. Among OB-GYN's beliefs according to years of practice ($p < .05$), other barriers to effective screening for alcohol use included: lack of time (38%), lack of adequate screening tools (30%) and feeling personally uncomfortable discussing it

Table 4. Barriers to Effective Screening

Based on your experience, how often do the following things affect your ability to SCREEN for alcohol abuse in prenatal clients?	All the time	Most of the time	Sometimes	Not often/ Never	Not sure
Clients often do not tell the truth	79.6%	20.4%	.0%	.0%	.0%
Not enough time	3.6%	32.1%	62.5%	1.8%	.0%
Lack of accurate screening tool/method	7.2%	22.5%	40.5%	29.7%	.0%
Client may get defensive and discontinue prenatal care	6.3%	18.0%	44.1%	28.8%	2.7%
Uncertainty of effectiveness of treatment	2.7%	7.2%	47.7%	42.3%	.0%
Lack of local resources	4.5%	13.5%	37.8%	38.7%	5.4%
Personally uncomfortable talking about alcohol abuse	11.7%	16.2%	41.4%	25.2%	5.4%
Not confident in personal ability to screen for alcohol abuse	.0%	2.7%	15.3%	79.3%	2.7%
Other	.0%	.0%	.0%	.0%	.0%

(28%). There was a significant difference among years of practice regarding the percentage of those who reported that lack of an adequate screen tool affected their ability to screen for alcohol abuse in prenatal patients. Approximately 22% of OB-GYN's with 20+ years practice and 25% with 10-19 years of practice in contrast to about half (54%) of those less than 10 years in practice reported that not having a good screening tool affected their ability to screen most or all the time ($p < .05$). In addition, about 33% of those with fewer than 10 years of practice and 30% of those with 20+ years of experience said that another factor affecting their ability to screen patients for prenatal alcohol use was the client possibly getting defensive and discontinuing prenatal care. However, only small percentages of OB-GYN's (4%) that have practiced between 10-19 years held this belief ($p < .05$). Regarding a lack of resources as a barrier to screening, OB-GYN's who practiced 20+ years (27%) felt it was more of a barrier than those with fewer years in practice ($p < .05$). A significant difference was also found with gender. Approximately 22% of males compared to only 11% of females felt that lack of resources influenced their ability to screen prenatal clients for alcohol abuse ($p < .05$). Traditionally "lack of time" has often been considered the largest barrier to

screening, yet according to these findings it was more often ranked by 63% to only be the case some of the time.

Preferred educational format

A set of questions was included in the survey instrument to assess preferred educational format (Table 5). Both rural and urban OB-GYNs report journals specific to their subspecialty as their most trusted source of medical information. Closely following this for urban OB-GYNs were conferences at 14% whereas none of the rural OB-GYNs reported conferences as being their most trusted source of medical information ($p < .05$). Interestingly, conferences were not even rated as a source of medical information by those with less than 10 years of practice. Conferences were more favorably viewed by those between 10-19 years (13%) and by those with 20+ years of practice (9%).

DISCUSSION

It appears that within the past ten years since the Diekman et al⁷ study, knowledge, attitudes, current clinical practices, and educational needs of obstetrician-gynecologists, at least in the State of Kentucky, regarding patients' alcohol use during pregnancy may have improved considerably in some respects.

Table 5. Preferred Educational Format

In your opinion, what is your most trusted source of medical information?	All (n=112)	Males (n=68)	Females (n=44)	Rural (n=39)	Urban (n=66)	Less than 10 Years (n=24)	Between 10-19 Years (n=24)	20+ Years (n=64)
Colleagues	2.7%	4.4%	.0%	.0%	1.5%	4.2%	.0%	3.1%
Journal specific to my specialty	85.3%	79.5%	83.0%	92.3%	81.8%	79.2%	87.5%	82.8%
Conferences	8.0%	5.9%	11.4%	.0%	13.6%	.0%	12.5%	9.4%
Websites: (please list)	1.8%	.0%	4.5%	5.1%	.0%	8.3%	.0%	.0%
Other	4.5%	4.4%	4.5%	2.6%	3.0%	8.3%	.0%	4.7%

PERCEPTIONS OF PREGNANCY AND ALCOHOL USE

In the Diekman et al⁷ study, only 20% of women reported that women should abstain from alcohol whereas in this study, about 2/3 of respondents believe that there is no safe amount of alcohol consumption during pregnancy. It is still somewhat disturbing, however, that about 28% of our respondents felt that an occasional glass of wine would not cause harm, posing the risk for mixed messages to patients.

There is a greater need for improvement in various areas of practice. Lack of screening for alcohol has not changed and continues to be a problem. The Diekman et al⁷ study found that only one in ten respondents reported using a screening questionnaire. In our study, lack of screening was attributed to not having a good screening tool. Diekman et al's⁷ study found that OB-GYNs who graduated from medical school before 1989 were more likely to report uncertainty regarding alcohol thresholds associated with selected adverse pregnancy effects or to regard higher consumption levels to be without risk of these outcomes.

The demographics may have shifted slightly in this regard for our study in that those who were less than 10 years in practice are more likely to report that an occasional glass of wine will not cause harm (45%) when compared to those who are 10-19 years in practice (16.7%) and those who are 20+ years in practice (25%) (those who were likely involved in the Diekman et al⁷ study). There are some similar findings in this study in that among OB-GYNs practicing less than 10 years, it was found that approximately 17% believed it was okay to consume alcohol during the third trimester and 8% were not sure. None of those who were 10-19 years in practice felt that it was okay to drink during the third trimester (or any other trimester) compared to 4.7% of those 20 or more years in practice. It appears that more education is needed for those who were more recently trained, but certainly education about prenatal alcohol use still needs to be done across the board.

Although time limitations, patient sensitivity, need for information, and additional training were reported to be the top barriers

to effective screening for alcohol use during pregnancy, the overwhelmingly top barrier reported by 80% of respondents was related to the patient not being truthful. This is understandable in view of guilt feelings a woman may carry if she admitted that she were drinking while pregnant. It appears that we should approach this topic in a more sensitive manner in order to make women more comfortable admitting alcohol use without the feel of guilt or retribution. Otherwise, the ability to help pregnant women who drink cannot be achieved.

Lack of time was still reported to being a barrier, but a new barrier to surface as being most important was the perceived lack of adequate screening tools and that of feeling personally uncomfortable discussing the issue. To address these findings, educational societies, regulating agencies, and residency training programs should focus on pointing out the availability of simple screening tools that can be utilized by office staff with reasonable sensitivity.

The future plans of the FASD Southeast Center are to provide an educational intervention to all Kentucky OB-GYNs involved in the study. This would include education on the screening tools, time constraints, and ways to approach pregnant women about alcohol use. A repeat survey after such intervention should indicate if there is improvement. This should assist in our goals of addressing alcohol intake during pregnancy and decreasing the incidence of FASD.

LIMITATIONS

This study is limited in that it was done in one southern state; however, all OB-GYNs in the state listed in the files of the Kentucky Medical Association (both members and non-members of the KMA) were sent copies of the survey. This may limit some of our ability to generalize the findings of this study to the OB-GYN practitioners around the country. The response rate of 28%, although reasonable and impressive when compared to other similar surveys, does not come close to the 60% response rate of the Diekman et al⁷ study. However, the findings in this formative research could still inform FASD prevention

efforts in the state and possibly in other parts of the country, especially when examining the key points found in this study regarding the knowledge, attitudes, and practices of OB-GYN practitioners.

CONCLUSION

Prenatal patients trust their OB-GYN practitioners to guide them through a healthy pregnancy. It is known that a woman who consumes alcohol prior to pregnancy might desire to continue her use to some degree if she believes that a small amount may be okay or if she has alcohol abuse issues. This study revealed that a significant number of OB-GYNs have difficulty identifying prenatal patients who might be at risk for alcohol use during pregnancy. The majority reported that the greatest barrier for screening for alcohol use in prenatal clients is the perception that patients are often dishonest about their use of alcohol.

Considering these results and the perceived barriers, it is important to continue to educate OB-GYNs about alcohol use in pregnancy. Further research needs to be done to help OB-GYNs overcome the perceived barriers that prevent them from providing appropriate care and counsel on this specific issue. Across the board, OB-GYN providers need to continually be made aware that available evidence indicates there is no safe time and no safe amount of alcohol consumption during pregnancy. Based on this study, practitioners of fewer than 10 years need to receive additional education about the availability of tools that screen for prenatal alcohol use and the concept that even third-trimester exposure to alcohol has not been proven safe. Male practitioners in the region may need to be targeted as a group, given the finding that a third of them still hold the opinion that "an occasional glass of wine will not cause harm," and may continue to give this advice to their patients.

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