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Obstetrician-gynecologists' practices and attitudes on substance use screening during pregnancy

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Abstract

Objective: To describe obstetrician-gynecologists' practices and attitudes related to substance use screening in pregnant patients.

Study Design: A 2017 cross-sectional survey assessed U.S. obstetrician-gynecologists' (n=462; response rate=34%) practices (substance use screening frequency and methods) and attitudes (practice priority of screening, confidence in treating, and responsibility statements). Chi-squared tests and adjusted modified Poisson regression were used to estimate associations between practices and attitudes.

Results: Of 353 respondents with screening information, 79% frequently screen for substance use and 11% used a validated instrument. Confidence was highest for treating pregnant patients

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Conflict of Interest

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using tobacco (81%). Respondents whose practices make it a high priority to screen for all substances were 1.2 times as likely to frequently screen as their counterparts (95% CI: 1.1–1.3).

Conclusions: Four out of five obstetricians-gynecologists reported a high frequency of substance use screening in pregnant patients. Findings highlight the importance of increasing priority of substance use screening by obstetrician-gynecologists.

Introduction

Approximately 20% of infants are exposed to substances (tobacco, alcohol, marijuana, opioids, and other illicit drugs) during pregnancy annually (1). Existing literature demonstrates associations between tobacco and alcohol use during pregnancy and respective infant outcomes of preterm birth and low birthweight (2–4) and fetal alcohol spectrum disorders (5) and birth defects (6, 7). Parallel with the opioid crisis, incidence of neonatal abstinence syndrome in the United States has increased (8). Additionally, concern remains regarding cannabis use during pregnancy and potential long-term developmental outcomes as more states consider legalization of medical and/or recreational cannabis (9–11). Women with substance use disorders have additional healthcare needs, such as co-occurring mental health conditions like depression or anxiety, and increased risk for infectious diseases (12).

Pregnancy provides a unique opportunity for providing care to women who might not otherwise see a physician. In addition, pregnant women may be more interested in receiving help to improve health behaviors and likely to modify their behaviors for the benefit of the infant (13, 14). Thus, obstetrician-gynecologists are uniquely poised to encourage substance cessation and engagement in treatment for substance use disorders during prenatal care. The United States Preventive Services Task Force (USPSTF) recommends universal screening of pregnant women for tobacco and alcohol use (15, 16). In 2008, the USPSTF found inconclusive evidence to recommend screening of pregnant women for illicit substances (17); this recommendation is currently being updated (18). A 2015 guideline from the American College of Obstetricians and Gynecologists (ACOG) recommends verbal screening for tobacco, alcohol, and illicit substances with a validated screening tool (19). Additionally, ACOG recommends physicians provide brief intervention for positive substance use screens, such as engaging in short conversations with the patient, providing feedback, advice, and treatment or referral to treatment in order to improve pregnancy outcomes (12, 19–21).

Despite guidelines for screening and management of pregnant women using substances (12, 19–21), screening rates by obstetrician-gynecologists appear to be declining. A 2000 survey of ACOG membership found that 92% of physicians always asked pregnant patients about alcohol use during their first visit (22); this proportion fell to 82% in 2010 (23). Additionally, the use of validated tools to screen for alcohol use fell from 23% in 2000 to 11% in 2010 (22, 23). While a majority of obstetrician-gynecologists report screening their patients for other illicit substance use during pregnancy (24, 25), a 2011 survey found that 42% used a validated screening tool to screen for substance use (26). It is unknown whether these estimates have changed in the context of the opioid crisis and cannabis legalization. Compared to screening and treatment for tobacco and alcohol use during pregnancy, illicit

substances present unique screening and treatment challenges and legal considerations that may influence obstetrician-gynecologists' substance use screening practices (12, 19, 27, 28).

The objectives of this study were to (1) describe the frequency and method of substance use screening in a sample of obstetrician gynecologists; (2) estimate the association between screening frequency and obstetrician-gynecologists' attitudes (i.e., screening priority, confidence in treating, responsibility for screening, awareness of resources, referral and treatment obligations, and notifying patients of legal obligations); and (3) identify the independent association between screening frequency and attitudes, controlling for physician, patient population, and practice characteristics. Understanding health care physician attitudes and their associations with screening frequency can inform efforts for improving care for substance use during pregnancy.

Materials and Methods

Design

ACOG and Centers for Disease Control and Prevention (CDC) investigators collaboratively developed a cross-sectional survey to assess obstetrician-gynecologists' substance use screening frequency and methods, perceptions of priority of routine screening, confidence in treating various types of substance use, and responsibility for screening, referral, and treatment. Survey content and format was based off of subject matter experts' input and previously conducted surveys of obstetrician-gynecologists. The survey was piloted by five obstetrician-gynecologists who were removed from the sampling frame.

The 32-question survey was fielded from March to September 2017 and administered by a combined electronic/paper mailing protocol. An email with an online survey link was sent to all potential participants. An option to opt-out of the survey was provided to all potential participants. Non-responders who did not opt-out received a weekly reminder email for five weeks, a mailed questionnaire with a cover letter and a coded return envelope. Finally, non-responders received an abbreviated questionnaire containing seven critical questions (priority of substance use screening by substance, management practices regarding pregnant and postpartum women using opioids, years of practice post residency, certification as an addiction specialist, board certification in MFM, and insurance coverage of patient population) which were identified by the CDC-ACOG team. Since the survey was voluntary, completion of a survey was considered consent to participate. ACOG received local IRB approval; CDC IRB was not applicable as CDC was not engaged in research and received a de-identified dataset. The information collection was approved by the Office of Management and Budget (#0920–1168) in accordance with the Paperwork Reduction Act.

Participants

ACOG membership includes 95% of board-certified obstetrician-gynecologists in the United States holding active medical licenses and in medical practices focused on women's health. Both Collaborative Ambulatory Research Network (CARN) members (29), practicing ACOG fellows who had indicated interest in participating in survey research, and non-CARN members were sampled. Out of 1,400 current CARN members, 750 were randomly

selected. An additional 750 non-CARN members were selected using proportionate stratified sampling by district. Random samples were taken from each of the 12 ACOG districts. Thus, within each district, each fellow had an equal probability of selection.

Measures

Survey questions relevant to the current analysis assessed: (I) frequency and method of substance use screening, (II) priority of routine screening for specific substances, (III) confidence in treating for specific substances, and (IV) physician perceived responsibility (Table 1). Other survey questions used in this analysis included physician (sex, race, board certification, and years of practice), patient population (percentage of patient's race identified as white and Medicaid enrollees), and practice (practice type, average number of new pregnant patients per month, region, and location) characteristics.

Frequency of screening was dichotomized into high ('always' or 'usually') and low ('sometimes', 'rarely', 'never'; Table 1). In alignment with ACOG guidelines that recommend screening pregnant women for all substances (tobacco, alcohol, cannabis, opioids (illicit and prescription use), and other illicit drugs), we combined all substance types to create comprehensive variables to be used in the adjusted model. 'High priority for routine screening for all substances' was defined as respondents who answered 'high priority' to screening for all seven substances in their practice (tobacco, alcohol, cannabis, illicit substances, prescription opioids, non-medical use of prescription opioids, and non-medical use of other prescription medications). 'Confident in treating women using various substances' was defined as respondents who reported feeling 'confident' or 'very confident' that they could appropriately treat patients using tobacco, alcohol, cannabis, or opioids. Additional categorizations of survey responses can be found in Table 1.

Analyses

We calculated demographic frequencies of respondents and questions on substance use screening. Questions on frequency of screening was only included on the long survey, thus respondents with missing information on frequency of substance use screening were excluded from this analysis. Non-response bias was assessed to determine if demographic characteristics (region, age, and sex) differ between respondents and non-respondents. Pearson chi-squared tests assessed the association between reported screening frequency and attitudes towards priority of substance-specific routine screening, confidence in treating for specific substances, and responsibility statements. The independent association of high screening frequency for all substance use with perceived high practice priority for routine screening for substances, confidence in treating all substances, and feeling responsible for screening, controlling for physician, patient population, and practice characteristics was assessed with a Poisson regression with a robust error variance, or Modified Poisson Regression (30). Controlling for all of these variables, we also assessed whether or not the association between high priority for routine screening and substance use screening frequency differed by individual substance type. A 2-tailed probability of <0.05 was considered statistically significant. Data were analyzed with Stata software (Release 14. College Station, TX: StataCorp LP).

Results

The overall response rate for the survey was 34% (n=462). We received 293 responses from CARN members (44% response rate) and 169 responses from non-CARN members (25% response rate); 156 participants opted-out of the survey. These response rates may be indicative of CARN members' pre-indicated interest in responding to surveys. Of the respondents who answered the demographic questions, 63% were female, 81% self-identified as white, and 12% were board-certified in maternal-fetal medicine. On average, respondents had 21 years of practice since residency. The majority of respondents were from group practices, with an average of 35 pregnant patients each month. An estimated 73% of respondents had more than a quarter of their patients enrolled in Medicaid. Respondents were distributed across the U.S.; over 90% of respondents practiced in urban or suburban regions (Table 2). Analyses revealed no significant difference between respondents and non-respondents by gender or age, but respondents were more likely to be from the Midwest and the West than non-respondents ($p<0.01$). Of the 462 respondents, 16.5% (n=76) responded only to the abbreviated questionnaire and 7.1% (n=33) did not answer the questions regarding frequency of substance use screening, totaling 23.6% (n=109) that did not answer the question of interest. Thus, the final analytical sample included 353 respondents.

Frequency and Method of Screening for Substance Use

Overall, 79% of respondents reported high screening frequency for substance use among their pregnant patients. The most common method of obtaining pregnant patient's substance use was a physician asking the patient (80%; Figure 1). Among respondents whose practices used a questionnaire to assess substance use, 11% reported using a validated screening instrument. A non-validated standard in-house screening instrument was used by 13% of respondents, and 76% of respondents reported that their practice does not use a standard screening instrument.

Priority of Routine Screening for Substance Use

Overall, about three-quarters of respondents consider routine screening for tobacco (77%), alcohol (77%), and illicit substance use (74%) to be a high priority in their practice (Table 3). Over half of respondents consider routine screening of pregnant patients for prescription opioid use (55%), non-medical use of prescription opioids (61.4%), and non-medical use of other prescription medications (61.4%) to be a high priority in their practice. Half (53%) of respondents consider routine screening for cannabis a high priority in their practice. Compared to those who do not frequently screen, respondents who frequently screen for substance use among pregnant patients were significantly more likely to report their practice considers it a high priority to screen for illicit substances (78% vs. 55%; $p<0.01$), prescription opioid use (63% vs. 28%; $p<0.01$), non-medical use of prescription opioids (68% vs. 37%; $p<0.01$), cannabis (58% vs. 34%; $p<0.01$), and non-medical use of other prescription medications (67% vs. 40%; $p<0.01$). There was no difference in perceived priority of screening for tobacco ($p=0.05$), or alcohol use ($p=0.41$) by frequency of substance use screening.

Confidence in Treating Substance Use

Overall, 81% of respondents reported that they felt confident in treating pregnant patients using tobacco (Table 3). An estimated 60% and 62% of respondents felt confident in treating pregnant patients using alcohol and cannabis, respectively. An estimated 37% of respondents felt confident in treating pregnant patients using opioids (illicit, prescription, and non-medical use). Compared to those who do not frequently screen, respondents who frequently screen for substance use among pregnant patients were significantly more likely to report feeling confident in treating pregnant patients using tobacco (84% vs. 70%; p=0.02), cannabis (66% vs. 44%; p<0.01), and opioids (42% vs. 21%; p<0.01). There was no difference in screening frequency by confidence in treating pregnant patients using alcohol (p=0.09).

Responsibility Statements

Among all respondents, 94% and 88% agreed that it was their responsibility to screen pregnant patients for substance use and be aware of local resources available to patients with substance use disorders, respectively (Table 3). Thirty-one percent of respondents agreed that it was their responsibility to ensure that pregnant patients entered treatment after referral. An estimated 86% of respondents agreed that it was their responsibility to notify patients of legal or medical obligation for testing of substance use. Compared to those who do not frequently screen, respondents who frequently screen for substance use among pregnant patients were significantly more likely to feel responsible for screening (97% vs. 86%; p<0.01) and being aware of local resources available for patients with substance use disorders (91% vs. 75%; p<0.01). Screening frequency was not statistically different for responsibility statements related to ensuring patients enter treatment after referral (p=0.82) or notifying patients of legal obligation for substance use testing (p=0.51).

Factors Associated with High Frequency of Screening

Controlling for physician, patient population, and practice characteristics, perception that screening for all substances was a practice priority was associated with greater prevalence of high screening frequency (aPR= 1.2; 95% CI: 1.1–1.3; n=281)(Table 4). Additional analyses assessed whether results differed by individual substances. A high screening frequency was associated with high screening priority for illicit drugs, prescription opioids, and non-medical use of prescription opioids and other drugs (respectively, aPRs: 1.2 (95% CI: 1.0–1.4), 1.3 (95% CI:1.1–1.5), 1.3 (95% CI: 1.1–1.4), and 1.2 (95% CI: 1.1–1.4)), but not for tobacco, alcohol, and cannabis (respectively, aPRs: 1.1 (95% CI: 0.9–1.1), 0.9 (95% CI: 0.9–1.1), 1.1 (95% CI: 1.0–1.3)).

Discussion

Among our sample of obstetrician-gynecologists, 4 in 5 reported a high screening frequency. The most common method for substance use screening was the physician asking the patient; however, only 1 in 10 respondents indicated using a validated screening instrument. More respondents considered tobacco and alcohol screening to be a high priority than other substances. Most respondents felt confident treating pregnant patients using tobacco (81%), but only a third felt confident in treating pregnant patients using opioids (37%). The majority

of respondents felt a responsibility to screen for substance use during pregnancy and to be aware of local resources available for patients with substance use disorders. Perceptions that routine screening for all types of substance use was a high priority in the respondent's practice was associated with a 1.2 increase in the prevalence of a high screening frequency after adjusting for physician, patient population, and practice characteristics.

ACOG recommends universal screening for substance use at the first prenatal visit via verbal screening (12, 19) to avoid missed cases, discrimination and/or bias based on race/ethnicity or class, and stigma (12, 31). Maintaining a non-judgmental approach is recommended for inclusive disclosure, and screening should be done in partnership with women to facilitate receptiveness of treatment (12, 19). While biologic samples provide objective toxicology evidence, they do not distinguish occasional users from those with substance use disorder or those on treatment (17), are often fraught with issues related to substances' half-lives and detection window (32), and do not provide the patient the opportunity to self-disclose.

Physician self-reported use of validated screening instruments in this study is similar to previous research that finds a low utilization of validated screening tools even when the majority of obstetrician-gynecologists ask their patients about alcohol use and illicit drugs (22–26). Utilization of verbal validated screening tools, such as 4P's, NIDA Quick Screen, and CRAFFT to identify drug and alcohol use among pregnant women is recommended by ACOG (12). A recent study validated five commonly used screening tools against biological samples and found that sensitivity and specificity for each screening tool differed by substance and that no tool had both high sensitivity and specificity (33).

A similar study to identify an optimal screening tool for substance use in pregnancy is ongoing (https://projectreporter.nih.gov/reporter.cfm: R01 DA041328). Screening behaviors may reflect a number of reasons, such as reimbursement coverage for screening, the burden of incorporating an additional screen into a patient's visit, and the need to fully assess the clinical utility of standardized questionnaires for pregnant populations who use illicit substance screening during pregnancy (17). Universal screening with validated tools may be promoted via increased dissemination of tools, reimbursement for their use or as part of a value-based payment to a hospital/system, and continued support to integrate screening into practices.

Higher screening priority and confidence in treating for alcohol and tobacco may reflect higher prevalence of use during pregnancy and evidence that screening, brief intervention, and referral to treatment (SBIRT) is effective for these substances (15, 16). Nonetheless, approximately 1 in 5 respondents neither consider tobacco screening to be a high priority in their practice nor feel confident in treating it, highlighting gaps that could be addressed through practice administration's policies and/or physician educational opportunities. Low physician confidence in treating pregnant women using opioids may be indicative of a lack of training in addiction medicine and/or knowledge of the benefits of medication assisted treatment for treatment of opioid use disorder. Physicians that more frequently advise medication assisted treatment for opioid use disorder were more likely to be confident in treating pregnant patients using opioids (34). ACOG guidelines advise physicians to be knowledgeable about local resources for substance use treatment and to provide a referral to

brief therapy or additional treatment to patients who need additional services (12). Published clinical experience indicates that personal communication with specialists at drug addiction clinics may lead to a more timely appointment and that discussions with the patient to address barriers with attendance may be helpful (35), thereby improving adherence to treatment. Given an overwhelming unmet treatment need for women with substance use disorders in the U.S. (36), obstetrician-gynecologists have a role in offering effective treatment, for example by providing behavioral interventions for tobacco cessation (15) and obtaining waivers to prescribe buprenorphine to treat opioid use disorder (12, 15). Practice patterns of obstetrician-gynecologists related to opioid use during pregnancy and postpartum are found in a companion analysis (34).

Strengths and Limitations

This study has several limitations. First, the response rate (34%) was low, ranging from 44% among CARN members to 25% among non-CARN members. CARN members pre-indicate interest in responding to surveys and may be more likely to carve out time to respond to surveys. Data collection included online and paper options were used to increase the response rate. There was significant difference in U.S. regions between respondents and non-respondents, but not for sex and age; thus, our results may not be generalizable to all obstetrician-gynecologists. Screening practices of non-responders to the survey or to the frequency of screening question are unclear. Nonresponse bias is less problematic in physician populations compared to other survey populations (37). Our estimates of screening frequency may be overestimated due to social desirability bias and an interest in substance use disorders and screening among our respondents. Second, to align with ACOG's universal screening for substance use during pregnancy, we used aggregated measures of substance use screening priority and confidence in treatment in the model, not allowing for assessment of the association between frequency and predictors by each substance. However, we explored these differences and noted that physicians who reported high priority for illicit drug screening were more likely to have a high screening frequency. Third, our sample was not robust enough to examine whether attitudes and screening practices differ among respondents practicing in states with and without policies criminalizing or requiring report of suspected substance use during pregnancy. Overall, these data are based on self-report and rely on respondents' interpretation of knowledge, attitudes, and practices of substances included in the survey (e.g., confidence in treatment asked about opioid use and did not specify illicit versus prescription use).

Conclusions

In conclusion, the majority of obstetrician-gynecologists reported a high frequency of screening pregnant women for substance use, but many do not use a validated screening tool. After controlling for physician, patient population, and practice characteristics, respondents who considered routine screening a priority of their practice had a 1.2 times higher prevalence of high screening frequency. Findings suggest a need to understand the best method of gaining disclosure on substance use from pregnant women. Additionally, public health strategies are needed to increase training and education for obstetrician-gynecologists to improve confidence in treating for substance use.

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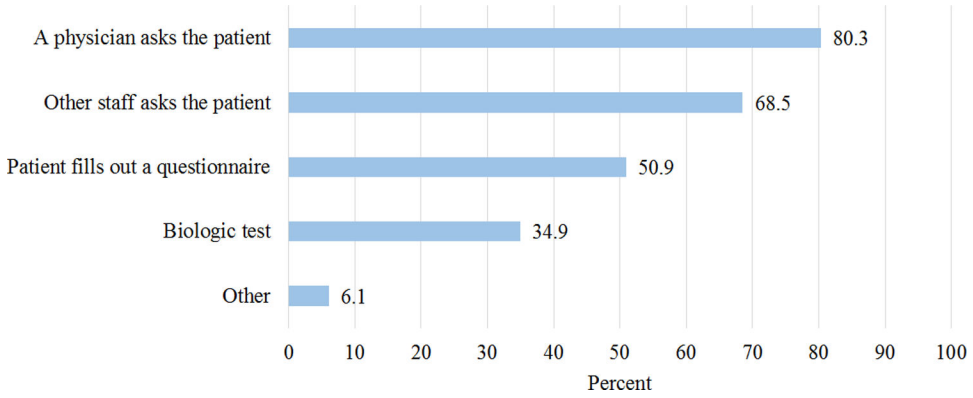

Figure 1.

How Practice Obtains Information about Pregnant Patients' Substance Use, Survey of American College of Obstetrician and Gynecologists Members, 2017 (n=375)

Table 1.

Questionnaire items from the survey of American College of Obstetricians and Gynecologists members, 2017 (n=462)

Theme	Question	Answer Options	Categorization
I. Frequency and Method of Screening	1. In your practice, how often do you screen for substance use among pregnant patients (including illicit use and non-medical use of prescription opioids)?	A. Usually B. Always	High frequency
		C. Sometimes D. Rarely E. Never	Low frequency
	2 How does your practice obtain information about pregnant patients' substance use (including illicit use and non-medical use of prescription opioids)?	A. A physician asks the patient B. Other staff asks the patient C. Patient fills out questionnaire D. Biologic test E. Other (please specify) F. My practice does not screen for substance use	N/A
	3. If your practice uses a questionnaire to assess substance use, please check the one most frequently used:	A. My practice does not use a standard screener B. Other (please specify)	My practice does not use a standard screening instrument
		B. Other (please specify)	Standard in-house screening instrument
		C. 4P's Plus© Screen for Substance Use in Pregnancy D. 5Ps Prenatal Substance Abuse Screen E. Substance Use Risk Profile – Pregnancy (SURP-P) F. CRAFFT screener for adolescent and young adult substance abuse G. Wayne Indirect Drug Use Screener (WIDUS) H. National Institute on Drug Abuse (NIDA) Quickscreen	Validated screening instrument
II. Priority of Screening	To what extent is any routine screening of the following among pregnant patients in your practice a priority? 1. Prescription opioid use 2. Non-medical use of prescription opioids (i.e. using opioids for reasons other than prescribed) 3. Non-medical use of other prescription medications (benzodiazepines, barbiturates, etc.) 4. Illicit substance use (heroin, cocaine, hallucinogens, etc. 5. Cannabis use 6. Tobacco use 7. Alcohol use	A. Not a priority B. Moderate priority C. High Priority	N/A
III. Confidence in Treatment	Do you feel confident that you can appropriately treat your pregnant patients who are using the following substances? 1. Opioids 2. Cannabis 3. Tobacco 4. Alcohol	A. Not confident	Not confident
		B. Somewhat confident	Somewhat confident
		C. Confident D. Very confident	Confident
IV. Responsibility	Please indicate how much you agree or disagree with each statement. 1. It is my responsibility to screen all pregnant patients for substance use	A. Strongly disagree B. Disagree C. Neutral	Neutral/Disagree
		D. Agree	Agree

Theme	Question	Answer Options	Categorization
	2. It is my responsibility to be aware of local resources available for patients with substance use disorders. 3. It is my responsibility to make sure patients enter treatment after I refer them. 4. When there is a legal or medical obligation for testing patients for substance use, it is my responsibility to notify patients of this testing.	E. Strongly Agree	

Table 2.

Characteristics of Obstetrician-Gynecologist Respondents and Practices, Survey of American College of Obstetricians and Gynecologists Members, 2017

Physician, Patient Population, and Practice Characteristics	Total Answered	%
Physician identifies as female	349	63.0
Physician identifies as non-Hispanic white	347	81.0
Physician is Maternal Fetal Medicine (MFM) board certified	346	11.6
Years since physician's residency completed, Mean ±SD	410	20.5 ± 10.7
% of patients race/ethnicity white, Mean ±SD	326	52.6 ± 24.9
>25% of patients enrolled in Medicaid	409	72.6
Practice type	350	
Solo private practice		10.9
Non-solo practice[1]		89.1
Number of pregnant patients in month, Mean ± SD	331	34.5 ± 72.2
U.S. region of practice	346	
Midwest		25.1
Northeast		22.0
South		29.5
West		23.4
Location of practice	347	
Urban		63.7
Suburban		28.2
Rural/Military		8.1

[1] Includes partnership, group, hospital, university, HMO/Staff model, and other practices

Table 3.

Obstetrician-Gynecologists' Perceptions of Priority of Screening, Confidence in Treatment, and Feelings of Responsibility by Frequency of Substance Use Screening for Pregnant Patients, Survey of American College of Obstetricians and Gynecologists Members, 2017

			Frequency of Substance Use Screening		
Respondent Perceptions and Attitudes	**N**	**Total, %**	**High Frequency, %**	**Low Frequency,%**	**p-value[1]**
Perceived practice routine screening for…					
Tobacco Use	350				0.05
High Priority		76.6	79.1	66.7	
Moderate Priority		21.4	19.4	29.2	
Low Priority		2.0	1.4	4.2	
Alcohol Use	351				0.41
High Priority		76.6	77.7	72.6	
Moderate Priority		21.1	20.5	23.3	
Low Priority		2.3	1.8	4.1	
Illicit Substance Use	351				<0.01
High Priority		73.5	78.4	54.8	
Moderate Priority		20.8	18.4	30.1	
Low Priority		5.7	3.2	15.1	
Prescription Opioid Use	349				<0.01
High Priority		55.3	62.5	27.8	
Moderate Priority		34.1	31.4	44.4	
Low Priority		10.6	6.1	27.8	
Non-medical use of prescription Opioids	350				<0.01
High Priority		61.4	67.9	37.0	
Moderate Priority		28.3	26.4	35.6	
Low Priority		10.3	5.8	27.4	
Cannabis Use	348				<0.01
High Priority		53.2	58.2	34.3	
Moderate Priority		36.5	33.8	46.6	
Low Priority		10.3	8.0	19.2	
Non-medical use of other prescription medications	347				<0.01
High Priority		61.4	67.2	39.7	
Moderate Priority		29.1	25.9	41.1	
Low Priority		9.5	6.9	19.2	
Confidence in treating pregnant patients using…					
Tobacco	340				0.02
Confident		81.2	84.3	69.9	
Somewhat Confident		13.8	11.2	23.3	

			Frequency of Substance Use Screening		
Respondent Perceptions and Attitudes	**N**	**Total, %**	**High Frequency, %**	**Low Frequency,%**	**p-value[1]**
Not Confident		5.0	4.5	6.9	
Alcohol	340				0.09
Confident		60.3	63.3	49.3	
Somewhat Confident		27.7	25.8	34.3	
Not Confident		12.1	10.9	16.4	
Opioids	340				<0.01
Confident		37.1	41.6	20.6	
Somewhat Confident		34.7	34.8	34.3	
Not Confident		28.2	23.6	45.2	
Cannabis	340				<0.01
Confident		61.5	66.0	44.4	
Somewhat Confident		23.8	21.3	33.3	
Not Confident		14.7	12.7	22.2	
It is my responsibility to…					
Screen all pregnant patients for substance use	340				<0.01
Agree		94.4	96.7	85.9	
Neutral/Disagree		5.6	3.4	14.1	
Be aware of local resources available for patients with substance use disorders	340				<0.01
Agree		87.6	91.0	74.7	
Neutral/Disagree		12.4	9.0	25.4	
Make sure patients enter treatment after referral	340				0.82
Agree		31.3	31.0	32.4	
Neutral/Disagree		68.7	69.0	67.6	
If applicable, notify patients of legal or medical obligation for testing for substance use	340				0.51
Agree		85.6	86.2	83.1	
Neutral/Disagree		14.5	13.8	16.9	

[1]Column differences assessed with Pearson chi-squared tests

Table 4.

Characteristics Associated with Physicians Reporting a High Frequency of Substance Use Screening Among Pregnant Patients, Survey of American College of Obstetricians and Gynecologists Members, 2017 (n=281)

Physician Characteristics	**aPR[1] (95% CI)**
Perceives screening for seven types of substances to be a high priority in their practice[2]	**1.2 (1.1–1.3)**
Confident in treating patients using various substances[3]	1.1 (1.0–1.2)
Feels responsible for substance use screening	1.3 (0.9–1.9)
Physician female sex	1.0 (0.9–1.2)
Physician white race/ethnicity	1.0 (0.9–1.2)
MFM board certified	1.1 (0.9–1.3)
<20 Years since residency completed	1.0 (0.9–1.2)
Patient Population Characteristics	**aPR* (95% CI)**
Patients white race/ethnicity	
0–25%	Ref.
26–50%	1.0 (0.8–1.3)
51–100%	1.2 (0.9–1.4)
Patients on Medicaid	
0–25%	Ref.
26–50%	1.0 (0.9–1.2)
51–100%	1.1 (0.9–1.3)
Practice Characteristics	**aPR* (95% CI)**
Practice Type	
Solo private practice	0.8 (0.6–1.0)
Non-solo practice	Ref.
≥15 New Pregnant Patients per Month	1.1 (0.9–1.2)
U.S. Region	
Northeast	Ref.
Midwest	0.9 (0.8–1.0)
South	0.9 (0.8–1.1)
West	0.9 (0.8–1.0)
Location	
Urban	Ref.
Suburban	1.0 (0.9–1.2)
Mid-Sized Town/Rural/Military	1.0 (0.9–1.2)

Bold aPR indicates significant at p<0.05

[1]Adjusted prevalence ratio calculated using Poisson regression with a robust error variance, adjusted for physician, patient population, and practice characteristics

[2]Physician perceives that their practice makes it high priority to screen for prescription opioid use, non-medical use of prescription opioids, non-medical use of other prescription medications, illicit substance use, marijuana use, tobacco use or alcohol use

[3]Physician feels confident in treating pregnant patients using opioids, marijuana, tobacco, or alcohol