Original investigation

Smoking Among Pregnant Women in Outpatient Treatment for Opioid Dependence: A Qualitative Inquiry

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Abstract

Introduction: Smoking during pregnancy is a major public health issue, contributing to adverse health outcomes. The vast majority of women with substance use disorders smoke during the perinatal period. Medication Assisted Treatment (MAT) is the standard of care for women using opioids during pregnancy. The majority of women engaged in MAT (88%–95%) report smoking. The purposes of this study were to describe: (1) facilitators and barriers to engaging in tobacco treatment among pregnant, opioid dependent women receiving MAT; and (2) strategies to tailor tobacco treatment interventions with this population.

Methods: Two semi-structured focus groups lasting approximately 45 minutes each were conducted with 22 women engaged in MAT. Focus groups were recorded, transcribed and analyzed in MAXQDA using content analysis.

Results: Participants reported: (1) desire to quit smoking for themselves and their children; (2) aversion to smoking; (3) a turning point in their lives from being pregnant and entering MAT; (4) nicotine dependence; (5) smoking as a way to cope with stress; (6) coping with dual dependencies; (7) past experiences with stopping smoking due to smoking restrictions; (8) perceived lack of success with nicotine replacement therapy or other tobacco treatment medications; and (9) the need for intensive environmental support for quit attempts.

Conclusions: Participants were motivated to quit smoking, but faced multiple complex barriers. Integrating tobacco treatment into the psychosocial services offered in conjunction with MAT would allow a healthcare provider to offer tailored tobacco treatment in a supportive environment.

Implications: Results of this qualitative study include facilitators and barriers to engaging in tobacco treatment among pregnant, opioid dependent women receiving MAT, as well as strategies to tailor tobacco treatment interventions for this population. In-depth knowledge of the complex barriers facing this patient population can be used to inform tailored tobacco treatment services that can be integrated into clinics providing MAT.

Introduction

Smoking during pregnancy increases the risk of multiple adverse outcomes including ectopic pregnancy, premature birth, orofacial clefts,¹ and sudden infant death syndrome.² The dangers of maternal smoking continue beyond pregnancy. Children exposed to secondhand

smoke have an increased risk for asthma and other respiratory disorders,³ as well as attention deficit hyperactivity disorder⁴ and poor neurocognitive performance.⁵ Children born to mothers who smoke during pregnancy have a higher risk of nicotine dependence in adulthood than their peers.⁶

Many women with substance use disorders (SUDs) smoke during the perinatal period. Further, individuals who use other substances are disproportionately burdened by the tobacco epidemic, with smoking rates from 71% to 92%.⁷⁻⁹ Compared to individuals who use one illicit substance, polysubstance users have higher odds of smoking (OR: 2.35, 95% CI: 1.37–4.04).

Opioid use during pregnancy is a growing public health concern. In the United States, opioid use (prescription pain medications and heroin) has tripled since the 1990s. Opioid drug use among women is highest among women of childbearing age. Although traditionally a higher percentage of men use illicit substances compared to women, the gender gap has lessened, and women experience faster progression from first use to addiction.¹⁰

Medication Assisted Treatment (MAT; treatment with buprenorphine or methadone) is the standard of care for treatment of pregnant women with opioid addiction.¹¹ Among patients in substance use treatment, individuals engaged in MAT smoke at higher rates than patients not engaged in MAT.¹² Pregnant patients seeking MAT have high rates of smoking, ranging from 88% to 95%.^{13,14} A significant risk of MAT is the development of neonatal abstinence syndrome, a treatable condition characterized by central and autonomic nervous system hyperactivity.¹¹ Babies who develop neonatal abstinence syndrome may require longer hospital stays¹⁵ or neonatal intensive care unit (NICU) admissions.^{11,16} In addition to the general negative health outcomes, smoking increases severity and duration of neonatal abstinence syndrome.¹⁷

Patients engaged in MAT have reported moderate interest in stopping smoking.¹² In addition, the structure of MAT links this high risk population to regular medical care throughout the prenatal period and is thus an opportune structure to incorporate smoking cessation interventions. The purposes of this study were to describe: (1) facilitators and barriers to engaging in tobacco treatment among pregnant, opioid dependent women receiving MAT; and (2) strategies to tailor tobacco treatment interventions with this population.

Methods

Patients were recruited for focus groups from group prenatal care sessions at a Maternal Fetal Medicine clinic for this qualitative, descriptive study. All women enrolled in the study were receiving MAT for opioid dependence during their pregnancy through the immediate postpartum period (up to 6 weeks). Two semi-structured focus groups lasting approximately 45 minutes each were conducted on-site at the clinic by a researcher trained in qualitative methods. The focus groups were recorded and professionally transcribed. The transcripts were checked against the recordings for accuracy. Data were analyzed in MAXQDA using content analysis, a detailed and systematic approach to identify patterns and themes.¹⁸ Prior to beginning data analysis, the research team developed a codebook based on the experiences in the focus groups and the research literature. Two members of the research team refined and affixed codes. Both focus group transcripts were coded to consensus, and then these codes were examined to identify themes and patterns.¹⁸

Results

Sample Characteristics

Two focus groups consisted of a total sample of 22 participants engaged in MAT. The participants ranged from 11 weeks pregnant

to postpartum. All participants were Caucasian, and the average age was 28 years (range: 22–37). The participants reported an average of four pregnancies (range: 1–15) and had an average of two living children (range 0–7). The majority of the participants had not experienced a previous preterm birth; three participants had had one previous preterm birth and one had three previous preterm births. Among the 22 participants, 19 (86%) reported current smoking. The three participants who did not report smoking were lifelong nonsmokers.

Nine overarching themes emerged from the data. Participants reported: (1) desire to quit smoking for themselves and their children; (2) aversion to smoking; (3) a turning point in their lives from being pregnant and entering MAT; (4) nicotine dependence; (5) smoking as a way to cope with stress; (6) coping with dual dependencies; (7) past experiences with stopping smoking due to smoking restrictions; (8) perceived lack of success with nicotine replacement therapy or other tobacco treatment medications; and (9) the need for intensive environmental support for quit attempts. These nine themes will be described in the context of the study aims (facilitators for tobacco treatment, barriers to tobacco treatment, and tailoring a tobacco treatment intervention).

Facilitators for Tobacco Treatment

Desire to Quit Smoking for Themselves and Their Families

Participants reported a desire to stop smoking. According to one woman, “I want to quit really bad. I’d give anything not to have a cigarette between my fingers.” Their pregnancy and families were strong motivators for smoking cessation. One woman explained, “I definitely would love to quit before my child gets here. I’d give anything if I could put the cigarettes down. Anything.” Participants also reported that successfully stopping smoking would give them a sense of empowerment. “If you can do it, then you are one strong person. I think if you could quit drugs and quit cigarettes, then you can do freaking anything in this world.”

Aversion to Smoking

Participants also described negative aspects of cigarettes, including the taste and smell that smoking leaves on their fingers and clothes. One woman reported, “I hate the smell on my fingers. I can’t stand for anybody else to light a cigarette around me because it stinks and that’s a shame...I know that I smell. I hate it.” Another woman explained, “[When I think about smoking] I try to think about the headache and the nasty taste, that’s usually my first thought. And if it persists [the craving] and I’m like hyperventilating, then I deal with the headache and the bad taste for a second but it’s mostly unpleasant.”

Life Turning Point

Participants also reported that they were experiencing a turning point in their lives, as a combination of pregnancy and being in early recovery from opioid use. One woman explained, “Things are just different now. I’ve never had a kid before so it’s like a slap in the face.” Another woman described recovery as a starting point for improving her health, beyond stopping the use of illicit substances. “I think of the recovery and being healthy...back in addiction, I didn’t brush my hair. I did not take care of myself at all, even just sticking a nasty one dollar bill in your nose...then you clean up some and you start eating better, you’ll move around and you’re not just sitting in a chair.”

Barriers to Tobacco Treatment

Nicotine Dependence

Despite reporting a desire to stop smoking and adopt a healthier lifestyle overall, respondents reported complex barriers. Participants described a strong drive to smoke. One woman explained, "Cigarettes literally control me." Another stated, "I need a cigarette after I eat and then when I'm in the car...in the morning, I want to wait to brush my teeth so I can smoke first." Another woman reported, "You want a cigarette after everything. A cigarette after sex, you want a cigarette before you go to bed. I'll wake up to go pee in the middle of the night and sometimes I just want to sit there and smoke a cigarette."

Coping With Stress

Participants report stress as a major contributor to their smoking. In addition to the stress of pregnancy and parenting, as well as managing relationships with friends and family, participants face stressors navigating the substance use treatment and legal systems. According to one woman, "When I got pregnant, I was on heroin. I told my doctor, 'Look I need help.'...They said, 'It's going to take a while to actually get on the medicine [MAT]'. Participants also reported concerns about being on MAT while pregnant, as well as transitioning off after pregnancy. "But then after the baby is born, getting off of Subutex is really scary." In addition to navigating the substance use treatment system, many participants were concurrently managing legal issues. One woman explained, "When I go in front of him [my parole officer], if I don't have a payment, he threatens to lock me up...and he's just putting a lot of stress on me."

Participants described a strong link between their smoking and stress levels. One woman explained, "I've been sneaking drags of a cigarette here and there and it's mostly because I feel like I'm gonna freak. I might go nuts if I don't." Another stated, "It's definitely nerves. That's the first thing that's in my mind. I feel bad, I don't feel good, let me grab a cigarette."

Participants described smoking as a comfort for the stressors in their life. "My crutch is my cigarettes." Participants described feeling unsure of how to deal with stress without cigarettes. One woman explained, "I don't know what to do when I'm anxious but to grab a cigarette. Before, I would get high." Another exchange highlighted this phenomenon:

Interviewer: What else [besides smoking] do you do to try to reduce stress?

Participant: I guess that's my point. I don't do nothing...I don't use nothing else but that.

Coping With Dual Dependencies

Participants also reported feeling overwhelmed with tackling dual dependencies (dependence on opioid drugs, as well as tobacco). According to one woman, "Beating one is already hard enough without having to struggle with two." Another explained, "Alright, I'll take the drugs [heroin] away and just take my medicine [MAT]. And then they want me to take my cigarettes too? I'm like, 'Oh my God.' One demon at a time" Participants reported fear that smoking cessation would lead to relapse to the use of illicit substances. "So if we just cut that out [smoking]...that would make the door to a relapse just that much wider. Maybe oil the hinges a little bit and help that door open."

Participants also reported addiction treatment providers shared their concerns that smoking cessation during early stages of recovery from substance use might be too stressful. One woman reported, "I went to a long term rehab treatment last year...the first 10 days

you're not allowed to smoke cigarettes...when I finally did get to smoke a cigarette, that sucker went out like 3 or 4 times just because I wasn't smoking it. And so I had said, 'You know, I'm just going to quit'. And they told me that they don't recommend that. They don't recommend you to quit smoking until you have been in recovery for a year because it just is stressful and it's overwhelming."

Tailoring a Tobacco Treatment Intervention

Past Experience With Smoking Restrictions

Participants reported that their past experience with stopping smoking was in the context of smoking restrictions, such as an inpatient treatment facility or prison. According to one woman, "I've never tried anything before [to try to stop smoking] besides the patch in detox." Some participants also reported cutting down on smoking while living in the home of a relative with a smoke-free home policy. "I can't smoke in my papaw's house and I stay there 4 or 5 nights out of the week and when it's cold outside, I ain't going outside to smoke." However, none of the participants reported long-term smoking cessation as a result of these smoking restrictions.

Lack of Success With Nicotine Replacement Therapy

Participants reported trying nicotine replacement therapy (NRT), predominately single therapy, in the past without success. "When I went into detox...they give me the patch and I still wanted to run my head through a wall." Another woman explained, "It's [NRT] kind of like Subutex for instance, like you put the patch on and it helps you not think about cigarettes but it doesn't take away how good it's going to feel to smoke a cigarette again." A woman also explained, "I keep thinking to myself, I'll be able to quit if I quit the drugs [heroin] and I had medicine to help me get off of drugs [MAT]. The same thing, nicotine patch....and I still can't quit. I still have the desire to smoke." Participants also reported having heard of or tried to use Chantix for smoking cessation, and expressed fear over possible side effects. One woman reported, "I tried that Chantix before...it has so many side effects. Nightmares" Another woman described, "I had a bad experience with Chantix...I'd had these vivid dreams and wake up all hours of the night...and it's like you're scared to death, like you're having a panic attack." However, despite the recognition of a need for support beyond NRT or other medications, the participants did not favorably view a support group primarily focused on tobacco issues. "I'd probably feel like a dork...I would feel weird if it's [a support group] just about smoking."

The Need for Intensive Support

Participants reported the need for a supportive home environment that was "very calm" and "a peaceful environment." One woman explained, "I would need everybody to go away." Some participants also described the potential for a support person similar to the sponsor role used in other addiction treatment. A woman stated, "I would need like a 24 hour coach." Another explained, "It's the same thing, the red flag, like vice. If I'm smoking a cigarette, I need to call my sponsor. I need to think about why I'm smoking a cigarette." Given the complex barriers to engaging in smoking cessation, participants described a need for intense medical, as well as environmental support.

Discussion

Similar to the general population of women who smoke during pregnancy, many women in this study reported a desire to stop smoking and the health of the baby was a strong motivator.¹⁹ Unlike the

general population of women who smoke during pregnancy,²⁰ none of the participants in this study reported smoking cessation during their pregnancy. The women reported multiple complex barriers to engaging in smoking cessation, as well as a need for intensive support. These findings, in conjunction with the literature, support the need for highly tailored tobacco treatment programs for women with SUDs. Compared to men, women smoke fewer cigarettes per day and cigarettes with lower levels of nicotine, yet women are less successful at smoking cessation and are more likely to relapse. In addition, women report less success with NRT than men.²¹ Even among this highly vulnerable population, there are gender specific complicating factors. Women with SUDs are very likely to have experienced significant trauma,²² and are more likely than men with SUDs to have co-occurring mood and anxiety disorders.²³ These factors can be a barrier to tobacco dependence treatment.^{10,24} Further, women accessing SUD treatment face more barriers than men including more social stigma, and a range of gender-specific complicating factors (eg, pregnancy, parenting issues).¹⁰

In addition to the similarities among pregnant women who use tobacco (those enrolled in MAT and nondependent women), fewer interventions have been tested and/or effective in women enrolled in MAT. A recent review of the literature identified only three interventions testing smoking cessation interventions among pregnant patients enrolled in MAT.¹⁴ Contingency management (an incentive driven program) had an impact on smoking cessation.²⁵ More research is needed to develop and test tailored tobacco treatment interventions for pregnant, opioid dependent women for implementation in clinics providing MAT.

Study participants reported that their past experience with quitting smoking occurred in settings with smoking restrictions. However, living with smoking restrictions did not translate into long term smoking cessation. This finding is similar to work by Lincoln and colleagues, who determined that tobacco-free policies in correctional facilities do not prevent individuals from relapsing to smoking on re-entry to the community.²⁶ In order to reduce relapse to smoking, Clarke and colleagues delivered an intervention (Working Inside for Smoking Elimination, WISE) including motivational interviewing and cognitive behavioral therapy 8 weeks before release from prison. Individuals participating in this intervention were 6.6 times more likely to have abstained from tobacco use at 3 weeks following prison release than those who did not.²⁷ This suggests that concurrent tobacco treatment in prisons, as well as in long term substance use treatment facilities, may help this patient population avoid relapse following a period of forced tobacco abstinence.

Participants in this study reported entering MAT after a period of "detox," provided in a tobacco-free facility. The provision of tobacco treatment services in conjunction with MAT may be a potentially effective time to intervene with pregnant patients to avoid relapse to smoking after the period of detoxification. The World Health Organization recognizes the critical nature of providing psychosocial services to promote holistic health in conjunction with MAT.²⁸ Integrating tobacco treatment into the standard of care at a MAT clinic would allow patients to regularly access tobacco treatment with a supportive healthcare provider who could tailor the services for each patient's needs. Examples of these services include assistance with navigating social service resources, counseling services, and stress management programs.

The women in this study reported high levels of stress that complicated tobacco treatment attempts. Hauge and colleagues demonstrated that women who experienced stress and negative life events

were less likely to stop smoking in pregnancy and more likely to relapse to smoking after the pregnancy compared to women who did not.²⁹ Alternative methods to cope with this heightened stress during pregnancy and postpartum include walking, yoga, snacking, and talking with friends.³⁰ Any tailored tobacco treatment program must address the very high level of stress in this patient population.

Finally, a culture shift is needed among behavioral health and substance use treatment providers related to the need for smoking cessation services for patients with SUDs. In a 2007 Association of American Medical Colleges survey, psychiatrists were the least likely medical specialist to address smoking with their patients.³¹ As the participants in this study reflected, there is a pervasive myth among practitioners that treating tobacco addiction may prompt patients to relapse to substance use.³² However, a substantial body of evidence suggests that smoking cessation with patients with mental illness or addiction does not harm, and in some cases actually improves, treatment outcomes.³³ A meta-analysis conducted by Prochaska and colleagues found that smoking cessation during SUD treatment was associated with a 25% increased likelihood of long term drug and alcohol abstinence. Smoking cessation support from behavioral health providers and addiction specialists is needed to make lasting change and reduce smoking rates in this high risk patient population.

Future studies are needed to determine evidence based recommendations for tobacco treatment for this patient population. Participants in this study reported limited success with NRT in their past tobacco quit attempts. These qualitative findings complement Miller and Sigmon's recent review of literature with findings that suggest that pharmacotherapy has limited efficacy for smoking cessation among opioid dependent patients.³⁴ However, future research is needed to determine if patients dependent on opioids have an atypical nicotine withdrawal pattern, which could lead to tailored tobacco treatment services.

Limitations

This study has several limitations. This study included a larger than ideal number in the focus groups. In addition, the focus groups were conducted in the clinic setting for convenience of the participants. However, there were some brief interruptions in the flow of conversation due to general clinic noise and flow. Finally, this is a homogenous sample of women from one MAT clinic in the US South, with no racial or ethnic diversity. There are also limitations inherent in qualitative research. Qualitative research requires a certain degree of interpretation, and particular statements can have multiple meanings. It is possible that each researcher's past experiences will influence their interpretation.³⁵ To mitigate this risk as much as possible, two researchers coded both focus group transcripts.

Conclusion

Smoking during pregnancy and secondhand smoke exposure during childhood leads to many well established adverse health outcomes. Pregnant women dependent on opiates smoke at very high rates. Results of this study indicate that these women are motivated to stop smoking, primarily for the health of their baby and other children. The women viewed becoming pregnant and entering substance use treatment as major life turning points that motivated them to make healthy lifestyle changes. However, they face many complex barriers, including major life stressors. Participants reported their past experience with quitting smoking occurred in settings with smoking

restrictions (eg, tobacco-free treatment center or prison), and they relapsed to smoking in the community. Integrating tobacco treatment into the psychosocial services offered in conjunction with MAT would allow a healthcare provider to offer tailored tobacco treatment in a supportive environment. A cultural shift among behavioral health providers with regard to tobacco treatment in addiction treatment settings is needed for longstanding change.

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Declaration of Interests

None declared.

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