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Cigarette Smoking Knowledge, Attitudes, and Practices of Patients and Staff at a Perinatal Substance Abuse Treatment Center

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Abstract

This study compares cigarette smoking knowledge, attitudes, and practices (S-KAP) of opioid- and other substance-dependent patients and their multidisciplinary staff at an outpatient perinatal substance abuse treatment center. Consenting patients ($n=95$) and staff ($n=41$) concurrently completed a modified form of the S-KAP survey instrument. 95% of patients reported currently smoking, and half endorsed wanting “to quit smoking now.” This patient desire to quit smoking was significantly underrated by staff compared to the patients themselves ($p=0.028$). Both patients and staff demonstrated sub-optimal knowledge of smoking health risks, but 73% of patients reported trying to quit with past pregnancies to avoid harm to the fetus/baby. Although results show that patients could benefit from smoking cessation strategies centered on smoking’s fetal/neonatal health risks, organizational interventions that focus on changing staff attitudes about patient desire to quit smoking may first need to be implemented.

Keywords

Smoking; pregnancy; knowledge; attitudes; practices

1. Introduction

Maternal cigarette smoking during pregnancy is associated with poor pregnancy outcomes including placental complications, spontaneous abortion, preterm delivery, low birth weight, and sudden infant death syndrome (SIDS) (U.S. Department of Health and Human Services, 2001). In the United States, approximately 20% of all women smoke cigarettes and, despite the association between maternal smoking and adverse pregnancy outcomes, about 14% of women smoke during pregnancy (Tong et al., 2009). The percentage of women smoking cigarettes during pregnancy is even greater in women with substance use disorders, with a

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smoking prevalence of up to 92% in this population (Haug, Stitzer, & Svikis, 2001; Jones et al., 2009; Svikis et al., 1997; Tuten, Jones, & Svikis, 2003). Substance-dependent women are already at high risk for poor pregnancy outcomes due to a variety of factors including compromised nutritional status, lack of adequate housing, infectious diseases directly and indirectly related to substance use (HIV, hepatitis B and C), and little if any prenatal obstetric care (Kuczkowski, 2007). There is evidence, primarily from animal studies, that maternal cigarette smoking may be even more harmful to the developing fetus than illicit substance use (i.e., cocaine, marijuana and opiates) (Cotton, 1994; Jacobson et al., 1994; Slotkin, 1998; Yawn, Thompson, Lupo, Googins, & Yawn, 1994).

Despite the prevalence and additional health burden of cigarette smoking in substance-dependent pregnant patients--and evidence that pregnant women with and without substance use disorders are able to successfully cut back and/or quit smoking cigarettes--barriers to integrating cigarette smoking treatments into substance abuse treatment settings persist (Heil, Linares Scott, & Higgins, 2009; Lumley et al., 2009). These barriers include staff cigarette smoking, staff lack of knowledge and unfavorable attitudes about smoking cessation, and programs having inadequate smoking cessation treatment practices. (Bobo, Slade, & Hoffman, 1995; Campbell, Krumenacker, & Stark, 1998; Fuller et al., 2007; Hahn, Warnick, & Plemmons, 1999). An example of such a barrier, for instance, is the staff belief that smoking cessation is a "low priority" for which substance-dependent patients have little motivation (Bobo, 1992; Gwydys, Passalacqua, Tajima, & Manser, 2007; Sees & Clark, 1993).

Cigarette smoking is frequently overlooked as a treatment priority for substance-dependent individuals (Hughes, 1993; Sees & Clark, 1993). This may be, in part, because some staff believe that smoking cessation efforts can be overwhelming to pregnant patients seeking substance abuse treatment (Fuller et al., 2007). Substance abuse treatment programs that include an array of services (e.g., detoxification, psychiatric treatment), and especially perinatal substance abuse treatment programs, are more likely to also provide smoking cessation services (Fuller et al., 2007). However, very little is known about patient and staff cigarette smoking knowledge, attitudes, and practices in such perinatal substance abuse treatment programs, and how these might be contrasted between patients and staff within a program.

The purpose of this study was to investigate cigarette smoking knowledge, attitudes, and practices of patients and staff at a perinatal substance abuse treatment center. This represents a unique opportunity to measure and compare these variables in two different samples (patients and staff) at the same time in a single treatment program. These comparisons can help to identify significant differences between these two samples, and improve our understanding of cigarette smoking knowledge, attitudes, and practices among substance-dependent pregnant patients and the staff who treat them. Awareness of strengths and weaknesses of patient and staff knowledge of the health risks of smoking during pregnancy, and gaps between patient and staff knowledge, enables the design of a smoking cessation curriculum appropriate to patient and staff knowledge level. Recognition of patient and staff attitudes towards smoking cessation treatment during substance abuse treatment, and how these attitudes may differ between patients and staff, identifies potential threats to smoking cessation program implementation in a substance abuse treatment setting but provides opportunities for pro-active group-specific educational interventions to mitigate such threats. Awareness of patient and staff knowledge and attitudes, combined with understanding of patients' current and past smoking and cessation practices, can thus inform the development of more effective strategies to eradicate cigarette smoking in this vulnerable population.

2. Materials and Methods

2.1 Participants

Surveys were administered to patients ($N=95$) and employees ($N=41$) at the Johns Hopkins Center for Addiction and Pregnancy (CAP). All patients at CAP are substance-dependent and either pregnant or <9 weeks post-partum, and all were eligible for participation. Employees at CAP include both Johns Hopkins University and Johns Hopkins Bayview Medical Center faculty and staff. All paid employees working at least 50% time at CAP were eligible for participation. Employee participants included staff and faculty from the following disciplines/areas: psychiatry/mental health ($n=14$), obstetrics ($n=4$), pediatrics ($n=3$), research ($n=6$), administration ($n=7$), support staff ($n=3$), and not specified ($n=4$). All patient and staff participants were over age 18 years. Staff participants were both females and males.

2.2 The Clinical Site

CAP is a comprehensive, multidisciplinary perinatal substance abuse treatment program located on the campus of the Johns Hopkins Bayview Medical Center. CAP provides intensive outpatient substance abuse treatment to pregnant and post-partum substance-dependent women and their children (Jansson et al., 1996), and has the capacity to treat up to 100 patients at any one time. Admission criteria are pregnancy and substance-dependence. A 16-bed domiciliary facility is available on site where the majority of patients spend the initial 8 days of treatment. Patients are eligible to return to this facility intermittently during treatment as needed. While at CAP, all patients receive substance abuse, psychiatric, and obstetric/gynecologic care. In addition, CAP also offers methadone treatment, family planning, pediatrics, transportation, and meal services. Patients are eligible for services at CAP until 2 months after delivery; however because patients can enter treatment at any point during pregnancy, the average length of stay is approximately 3 months.

2.3 Assessment Instrument

2.31 Patient S-KAP—The original staff version of the cigarette smoking knowledge, attitudes, and practices (S-KAP) instrument's development is described in detail elsewhere (Delucchi, Tajima, & Guydish, 2009). The authors reported on five scales (with Alpha coefficients ranging from .72 to .91) relevant to the study of smoking in substance abuse treatment settings, but not on individual survey item psychometric characteristics. This original staff S-KAP, used with permission by its originators, underwent modification for the present study to create a new version specific for patients at a perinatal substance abuse treatment center site. This modified patient version included most items contained in the original staff S-KAP with slight variations (e.g., irrelevant demographic items relating to staff role were eliminated, items about practices while pregnant were added, and items about knowledge regarding maternal smoking were added). The S-KAP for patients used in this study was divided into 3 sections: demographics and background characteristics (section 1; 13 items), cigarette smoking practices [section 2; 23 items including a modified Fagerström Test for Nicotine Dependence (FTND)], and knowledge and attitudes about smoking and interest in quitting during pregnancy (section 3; 28 items). Treatment program practice items were not included in the patient version. The status of the patient's drug use on admission was determined by the patient's response to the following item on the survey: "Substances using regularly when admitted to CAP with this pregnancy (all that apply)." As with the original staff version, items for the patient version were drawn from various sources including the National Cancer Institute's "4 A's" for smoking cessation (Glynn, Manley, & Pechacek, 1990), the FTND (Heatherton, Kozlowski, Frecker, & Fagerstrom, 1991), and the CDC Adult Tobacco Survey (Centers for Disease Control and Prevention (CDC), 2008). Item response choices varied for the instrument, and included yes/no, multiple choice, fill-in-the-blank and Likert score (1=strongly disagree to 5=strongly agree, with 3=neutral).

2.32 Staff S-KAP—The original staff S-KAP instrument underwent minor modification for the present study to create a new version specific for staff at a perinatal substance abuse treatment center site. This modified staff version included most items contained in the original staff S-KAP with slight variations (e.g., demographic items relating to staff role were eliminated for confidentiality reasons and items about knowledge regarding maternal smoking were added). Original and modified S-KAP items were drawn from various sources including prior studies of healthcare professionals (Borrelli et al., 2001; Velasquez et al., 2000), the National Cancer Institute's "4 A's" for smoking cessation (Glynn et al., 1990), the FTND (Heatherton et al., 1991), and the CDC Adult Tobacco Survey (Centers for Disease Control and Prevention (CDC), 2008). As was the case for the patient version, item response choices also varied for the instrument (yes/no, multiple choice, fill-in-the-blank and Likert score).

The modified S-KAP for staff was divided into 3 sections: demographics and job characteristics (section 1; 15 items), cigarette smoking practices (section 2; 17 items including a modified FTND), and knowledge, attitudes and treatment program practices (section 3; 64 items) covering a range of topics including smoking status and interest in quitting, knowledge about maternal and fetal risks of smoking, attitudes toward treating cigarette smoking in the context of substance abuse treatment, practices to address smoking among patients, and barriers to providing services.

2.4 Procedures

All study procedures were in accord with the standards of the Committee on Human Experimentation and approved by the local Institutional Review Board. Survey packets contained a survey and an envelope, but no identifying information. The front page of the survey stated: "Your completing this survey will serve as your consent to take part in this research study. Your taking part in this survey is completely voluntary. You can refuse to answer any question. If you do not agree to participate, or choose not to answer any question, it will not affect your care at Johns Hopkins. You will receive a five dollar gift certificate in return for completing the survey." All surveys were brief, self-administered, and anonymous, and were distributed and returned to a member of the study team between October 9 and November 18, 2008. Procedures for distribution and return varied between patient and staff. For patients, a table with surveys was located near the entrance to CAP. This table was staffed by a member of the study team who offered a survey packet to any patient interested in participating. A study team member collected patient surveys when completed and gave a gift card to the patient upon collecting the survey. For staff, a member of the study team first explained the nature of the study at a regular full staff meeting. Next, flyers announcing the survey were posted near employee mailboxes at CAP. Under each flyer was a stack of survey packets. Each employee who was interested in participating took a survey, completed it at their leisure, placed the completed survey in the anonymous envelope, and deposited the envelope in a designated collection box, at which time the employee received a gift card. Study team members then opened the envelopes from patients and staff and entered the anonymous data into a spreadsheet.

2.5 Data Analysis

All analyses were performed using SPSS Version 16.0 for the Macintosh (SPSS, Inc). Pearson's chi-square test was used to compare binary and categorical variables by sample. Continuous measures were analyzed using independent samples tests (Levene's test for equality of variances and t-test for equality of means) to compare patient and staff samples.

3. Results

Completion rates were 70% (95 of 136) and 68% (41 of 60) for patient and staff samples, respectively.

3.1 Patient Demographics and Substance Use Characteristics

Patient substance use characteristics are shown in Table 1. Most patients were abusing opioids on admission to treatment (75%), and most were maintained on agonist medication at the time of survey completion (78%). The mean (SD) methadone dose (mg) was 70 (24). 3 patients who were not abusing opioids on admission were, at the time of survey completion, on methadone agonist therapy due to relapse. 2 patients on agonist therapy did not complete the survey item regarding their current methadone dose and so data are missing for those respondents. Approximately half (51%) of patients reported using cocaine.

3.2 Patient and Staff Demographics and Cigarette Smoking Practices

Cigarette smoking prevalence varies among populations according to several demographic variables, with increased smoking prevalence within Caucasian, younger, and lower educational level populations compared to African American, older and higher educational level populations. Thus comparisons between patient and staff demographic variables are relevant to cigarette smoking practices of these two samples. Table 2 compares the two samples on selected demographic (section 1) and cigarette smoking (section 2) items common to both patient and staff surveys. With regards to demographic items, patients and staff did not differ significantly in terms of race ($p=0.693$), with 54% of patients and 55% of staff identifying themselves as Caucasian. The two samples did differ significantly on two demographic items, however. Mean (SD) age was significantly lower for patients [31 (6) years] compared to staff [35 (11) years] ($p=0.02$), and the percentage of participants with at least a high school education was significantly lower for patients (58%) compared to staff (98%) ($p<0.001$).

On cigarette smoking items common to patient and staff surveys, the percentage of participants who reported smoking during the 4 weeks prior to survey completion was significantly higher for patients (95%) compared to staff (25%) ($p<0.001$). Among participants who reported currently smoking cigarettes, mean (SD) total modified Fagerstrom score was not significantly different for patients [5 (2)] compared to staff [4 (3)] ($p=0.219$).

3.3 Patient and Staff Knowledge and Attitudes

In addition to cigarette smoking practices survey items, patient and staff response to cigarette smoking knowledge and attitudes items were compared. Patients and staff both showed generally good, although not excellent, knowledge of cigarette smoking's risk to health, with mean Likert score >2 for every survey item assessing knowledge. Patients and staff differed significantly on responses to 3 items assessing knowledge of the association between cigarette smoking and heart attack, wound healing, and low birth weight items ($p=0.013$, 0.004 , 0.036 , respectively). However the two samples did not differ significantly on other items that assessed knowledge of the association between cigarette smoking and general health, light cigarettes, secondhand smoke, quitting after 20 years of smoking, HIV, diabetic ulcers, impotence, bladder cancer, spontaneous abortion, and the impact of quitting on recovery and SIDS.

Mean (SD) Likert score (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) for the survey item assessing attitudes towards quitting smoking (for patients currently smoking cigarettes: "I want to quit now"; for staff: "My patients who smoke want to quit smoking") differed significantly between patients [3.5 (1.1)] versus staff [3.0 (.94)] ($p=0.028$). 50% of patient participants who reported currently smoking cigarettes agreed or strongly agreed as measured by the Likert score with the statement "I want to quit smoking now."

Among patient respondents who reported they were smoking cigarettes at the time they became aware of their current pregnancy ($n=84$), 3.6% ($n=3$) had quit smoking, 67.8% ($n=57$) had cut down the number of cigarettes per day, and 28.6% ($n=24$) had not changed their cigarette smoking practices. Among cigarette-smoking patient respondents who had been pregnant at least once prior to their current pregnancy (and who had not elected to terminate the prior pregnancy) ($n=77$), 48% ($n=37$) had never tried to quit with a prior pregnancy, 31% ($n=27$) had tried to quit with some of their pregnancies, and 21% ($n=16$) had tried to quit with every prior pregnancy. The reasons patients gave for trying or not trying to are summarized in table 3.

3. Discussion

This report measured and compared cigarette smoking knowledge, attitudes, and practices in patients and staff within the same perinatal substance abuse treatment program using a common instrument. Study results indicate a very high prevalence (95%) of cigarette smoking in a population of pregnant drug-dependent patients. Most patients reported cutting down on the number of cigarettes smoked during the current pregnancy and nearly half reported trying to quit during past pregnancies. Although the findings indicated that patients and staff at this perinatal substance abuse treatment center show generally good knowledge of the adverse health risks of cigarette smoking on maternal, neonatal and fetal health, the overall fund of knowledge for both patients and staff could be improved. Despite this sub-optimal patient knowledge regarding the health risks of smoking during pregnancy, however, the majority of patients who reported trying to quit with past pregnancies reported doing so to avoid harm to their fetus/baby. Approximately half (51%) of these patients expressed an immediate desire to quit smoking during their present pregnancy. But, this patient desire to quit smoking was significantly underrated by staff compared to the patients themselves. In prior work, it has been shown that women who smoke during pregnancy are less likely to feel personally responsible for the health of the fetus, and are less likely to follow their obstetricians' recommendations, such as taking prenatal vitamins and folic acid and iron supplements (Haslam & Lawrence, 2004). Non-adherence to medical advice is associated with numerous socioeconomic risk factors, which also present disproportionately among women who continue to smoke cigarettes during pregnancy (e.g., lower educational attainment, poverty) (Blackwell, 1976; Eaton et al., 2008; Kahn, Certain, & Whitaker, 2002). Lower socioeconomic status (SES) is correlated with lower reading levels (Dotson, Kitner-Triolo, Evans, & Zonderman, 2009), and so lack of knowledge about the risks of cigarette smoking during pregnancy may partly explain why those of lower SES may be more likely to disregard obstetrical advice and continue to smoke during pregnancy. The results of the present study, however, indicate that, despite the gap in highest education level achieved, patients were very similar to staff in this treatment program, in their knowledge regarding the increased maternal, fetal and neonatal health risks of cigarette smoking. These results suggest that information regarding the health risks of cigarette smoking have been effectively communicated to this population, and that lack of knowledge may not be the major factor sustaining continued smoking in this population of pregnant patients.

One of this study's findings, a very high patient cigarette smoking prevalence during pregnancy, confirms prior literature of an extremely high smoking prevalence in this population (Haug et al., 2001; Jones et al., Accepted for publication May 25, 2009; Svikis et al., 1997; Tuten et al., 2003). This study also extends these findings by demonstrating this high smoking prevalence is coupled with an expressed desire among current smokers to quit. Either spontaneously or with existing cigarette smoking cessation interventions, a majority of patients reported being able to reduce their smoking, but only a minority were able to quit. The reason most patients gave for trying to quit smoking during pregnancy was fear of harm to the fetus. This is consistent with the conceptualization of pregnancy as a "teachable moment" for cigarette smoking: a time when a higher proportion of women stop smoking (Daley, Argeriou,

& McCarty, 1998; DiClemente, Dolan-Mullen, & Windsor, 2000; Johnson, McCarter, & Ferencz, 1987; McBride, Emmons, & Lipkus, 2003; Solomon & Quinn, 2004; Woods, 1995). Motivated by concern over the health of their fetus, up to 40% of cigarette-smoking women in the US who become pregnant will stop smoking before their first prenatal visit (Quinn, Mullen, & Ershoff, 1991; Woodby, Windsor, Snyder, Kohler, & DiClemente, 1999). This rate is much higher than the spontaneous quit rate in the general population (Ershoff et al., 1999; McBride et al., 2003) and is evidence of this population's strong desire to stop smoking. High motivation to quit smoking is highly correlated with successful cessation (Miller & Coccores, 1991) and, thus, cigarette smoking treatments targeting pregnant women have been recognized as a priority (Floyd, Rimer, Giovino, Mullen, & Sullivan, 1993). Women who are able to quit smoking spontaneously during pregnancy usually have smoked fewer cigarettes per day, have had a greater number of past quit attempts, are more likely to have a non-smoking partner or support at home for quitting, and have stronger beliefs about the danger of smoking (Baric & MacArthur, 1977; Ryan, Sweeney, & Solola, 1980).

Entering substance abuse treatment represents an individual's commitment to change and so substance abuse treatment, too, has been conceptualized as an ideal "window of opportunity" for treating all dependencies, including cigarette smoking (Orleans & Hutchinson, 1993; Sussman, 2002). These treatment-seeking individuals are motivated to change and will come into regular contact with health professionals who can facilitate this intention to change (Clemmey, Brooner, Chutuape, Kidorf, & Stitzer, 1997; Schmitz, Rhoades, & Grabowski, 1995; Shoptaw et al., 2002). Desire to change and adequate professional support are both factors predictive of successful cigarette smoking treatment outcomes (DiClemente et al., 2000). Not surprisingly, cigarette smoking treatment has been shown to be effective in substance-dependent populations, including non-pregnant opioid-dependent populations; and, in some cases, enhances substance abuse treatment and recovery (Henningfield & McLellan, 2005; Joseph, Nichol, & Anderson, 1993; Stein et al., 2006). Despite national guidelines recommending targeting substance users for cigarette smoking treatment (Fiore, 2000), interventions for cigarette smoking are frequently neglected in substance abuse treatment programs (Fuller et al., 2007).

Staff attitudes towards smoking cessation interventions have been found to be more favorable in those substance abuse treatment facilities serving a greater number of pregnant patients (Fuller et al., 2007). Interestingly, results from the present study in a perinatal substance abuse treatment program suggest staff attitudes about patient desire to quit smoking cigarettes differed from patient attitudes. One explanation for this finding is that patients over-estimated their desire to quit smoking, possibly representing a social desirability bias on the part of patients (i.e., patients have no desire to quit smoking, but feel - because they are pregnant and being questioned about their smoking practices - they should respond in a manner that pleases the researcher and is more socially acceptable). This explanation may be supported by the finding that the vast majority (n=81) of the patients smoking at the time they became aware of their pregnancy (n=84) reported continuing to smoke cigarettes (96%). However, an alternative explanation for the discrepancy between patient and staff attitudes, and one supported by previous research (Campbell et al., 1998; Guydish et al., 2007), may be staff under-estimation of patient desire to quit and, therefore, lack of assistance from staff to help patients stop smoking cigarettes. This explanation is also supported by patient report of their cigarette smoking practices. Although most patients did continue to smoke cigarettes during pregnancy, a majority of patients reported cutting down on the number of cigarettes per day during their current pregnancy and trying to quit with a prior pregnancy. The reason most frequently endorsed for trying to quit smoking cigarettes during a past pregnancy was fear of harm to the fetus/baby which, again, reflects on the patients' level of knowledge regarding the impact of cigarette smoking on maternal, fetal, and neonatal health. Those patients who reported not trying to quit smoking during a prior pregnancy cited stress as the main deterrent. This

information is important as it can help guide behavioral and pharmacologic smoking cessation strategies for substance-dependent pregnant patients. Behavioral and pharmacologic intervention trials focused on stress reduction (e.g., mindfulness-based stress reduction, anti-anxiety medications), both alone and in combination, need to be conducted in this special population.

Compared to the 20% prevalence of cigarette smoking in the general population (Centers for Disease Control and Prevention (CDC), 2009), 40% of substance abuse treatment staff smoke cigarettes (Fuller et al., 2007), a prevalence that may help explain why substance abuse treatment staff are reluctant to address smoking cessation with their patients (Campbell et al., 1998; Guydish et al., 2007). In the present study only 25% of staff reported smoking cigarettes, which is higher than the general population but lower than smoking rates found at most substance abuse treatment facilities. There are several limitations to this study. The study was conducted at only one perinatal substance abuse treatment center and its findings may not generalize to other similar treatment settings. There is a lack of reliability or validity data on both the original and modified versions of the study instrument, and no comparisons were conducted on subgroups of patients with differing substance abuse patterns or subgroups of the treatment staff. Despite these limitations, this study is the first to concurrently assess cigarette S-KAP of both patients and staff of a perinatal substance abuse treatment program using a very similar instrument in the two populations, and represents the first step to exploring these issues in this high-risk population of pregnant patients and the staff who treat them. As substance abuse treatment programs target cigarette smoking among both patients and staff, there is the need to better understand the KAP of these samples. These findings lay the groundwork for further assessment of these variables, which may be useful to the development of smoking cessation interventions and measurement of their outcomes in substance-dependent pregnant patients.

Innovative cessation interventions are needed to reduce cigarette smoking in this high risk, special population of substance-dependent patients. This study's findings suggest that protective factors for smoking cessation in this population include patient desire to cut down and quit, and concern for the health of the fetus/neonate. Risk factors for continued smoking include possible staff underestimation of patient desire to quit, suboptimal patient and staff health risk knowledge, and patient perception of stress. Cessation interventions that build on patient interest in stopping or cutting down on the number of daily cigarettes, increase awareness of the health risks of smoking during pregnancy, and address the stress perceived as an obstacle to quitting may be effective strategies in perinatal substance abuse treatment settings. However, to most effectively address cigarette smoking in perinatal substance abuse treatment centers, organizational interventions that focus on changing staff S-KAP, such as increasing awareness of patient desire to quit, may first need to be implemented.

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Table 1**Patient Substance Use Characteristics**

	<u>Mean (SD) or Percent</u>
Substance of abuse on admission* (<i>N</i> =95)	
Opioid (<i>n</i> =71)	75
Cocaine (<i>n</i> =48)	51
Alcohol (<i>n</i> =21)	22
Cannabis (<i>n</i> =15)	16
Benzodiazepines (<i>n</i> =12)	13
Current methadone agonist therapy (<i>N</i> =74)	78
Current methadone dose, mg (<i>N</i> =72)	70 (24)

Table 2

Comparison of Patient and Staff Demographics and Smoking Practices

	Patient	Staff	P value	Chi-square	t	df	[95% CI]	
							Lower	Upper
Mean (SD) age (years)	31 (6) (N =94)	35 (11) (N =38)	0.020	na	* -2.416	47	-8.24122	-0.75094
Caucasian (%)	54 (N =94)	55 (N =40)	0.937	0.006	na	1	na	na
High school degree or greater (%)	58 (N =95)	98 (N =41)	<0.001	21.398	na	1	na	na
Any smoking in past 4 weeks (%)	95 (N =93)	25 (N =40)	<0.001	69.922	na	1	na	na
Mean (SD) modified Fagerstrom total	5 (2) (N =76)	4 (3) (N =6)	0.219	na	1.238	80	-0.77503	3.32766

na=not applicable

* Levene's Test

Table 3**Reasons for Trying or Not Trying to Quit Smoking during a Past Pregnancy**

Reason(s) tried to quit (N=40)	%[*]
To avoid harm to fetus/baby (n=29)	73
To protect my own health (n=10)	25
Smoking made me nauseated (n=10)	25
Other (n=1)	3

Reason(s) didn't try to quit (N= 51)	%[*]
Stress (n= 32)	63
Lack of support for quitting (n=10)	20
Prior good pregnancy outcomes without quitting (n=9)	18
Other (n=6)	12
Family pressure to continue smoking (n=3)	6

^{*} Each patient could endorse multiple items