A bridge to understanding smoking among women in rural Central Appalachia:

Qualitative interviews with local nurses

Cathy Jo Baker, PhD, RN[1]

Sarah-Catherine Showalter, BSN, RN[2]

[1] Assistant Professor, School of Nursing, Ohio University, bakerc2@ohio.edu

[2] Nurse Resident, Georgetown University Hospital, ss537612@ohio.edu

Abstract

The rural Central Appalachian area of Southeast Ohio has a persistently higher rate of tobacco-related women's health issues, low birth weight, and preterm birth than other parts of the state and the nation. Nurses from Appalachia can provide a bridge for health care providers who are not from the region to understand the perspectives of people who reside in Central Appalachian counties. The purpose of this study was to learn more about the influences and the special needs in Central Appalachia to inform women's health promotion and smoking cessation interventions.

Method: Semi-structured small focus group and individual interviews were conducted with 15 nurses working with women in rural Central Appalachia. Participants were asked about smoking and smoking cessation in relation to their knowledge and experience of women in their home county.

Findings: Major themes discovered included reasons for smoking, reasons for quitting, barriers to quitting, and perceptions of current interventions. The influence of the rural social environment on smoking, such as smokers in the social network and ambivalence toward the dangers of smoking, were particularly emphasized.

Conclusions: The particularly strong influence of the social environment is a force for change that must be considered in women's health promotion activities in this area. Tips for quitting smoking in Public Health Service guidelines may be more discouraging than helpful for women in the region according to study participants. Using the information gathered, smoking cessation interventions for rural women in this region should incorporate salient issues such as the social environment, smokers in the household, and the desire for gradual smoking cessation. The data suggests that the social context of smoking may dramatically affect smoking cessation efforts in this region.

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Cigarette smoking is the leading preventable cause of disease and death in the United States causing 480,000 premature deaths and $170 billion in direct medical costs annually (U.S. Department of Health and Human Services [DHHS], 2014). About 40 million people in the United States still smoke (16.8%), with smoking prevalence the highest among those with less education (GED 43.0%) and the lowest among those with a graduate degree (5.4%) (Centers for Disease Control and Prevention [CDC], 2015).

In the United States, rural tobacco use is generally higher than in urban areas (American Lung Association, 2012; Doescher, Jackson, Jerant, & Hart, 2006; Roberts et al, 2016). Smoking rates in Ohio Appalachian counties (35.2%) are significantly higher than in rural non-Appalachian Ohio counties (23.3%), as well as in urban and suburban counties (Ferketich, Wang, & Sahr, 2012).

The Central Appalachian Ohio counties that formed the setting for this study are categorized

as rural by the US Department of Agriculture. These counties were given the Non-Metro County Rural-Urban Continuum Codes of either 7-- urban population of 2,500 to 19,999, not adjacent to a metro area or 9 -- completely rural or urban population of less than 2,500, not adjacent to a metro area (USDA, 2013). This region is also considered to be part of Central Appalachia by the Appalachian Regional Commission [ARC], (2015).

Rural Central Appalachia has a relatively high rate of tobacco-related women's health problems, including low birth weight and preterm birth compared to other parts of the state and the nation. Most of the counties in this area have 21-40% of the population living in poverty, compared to the national average of 15.4% (Appalachian Regional Commission [ARC], 2015), which is of special concern as persons living below the poverty level have a higher smoking prevalence (26.3%) than persons at or above this level (15.2%). Prenatal smoking continues to be one of the most common preventable causes of infant morbidity and mortality in the United States, including pre-term birth and low birth weight (Dietz, et al., 2010; Seybold, Broce, Siegal, Findley & Calhoun, 2012). In an analysis of hospital birth data in Southern Appalachia, Bailey and Cole (2009) found that women from rural counties had significantly more low birth weight and pre-term infants. Further, these negative birth outcomes have been shown to be associated with smoking rather than poverty alone. Chertok, Luo, and Anderson (2011) found in a study with Central Appalachian women that those who smoked during their first pregnancy, but quit before their second conception, gave birth to a healthier subsequent child. Smoking during pregnancy is a particular problem in Ohio, with 16.3% of women still smoking in the third trimester (ODH, 2012), twice as high as the national rate of 8.4% (Curtin & Mathews, 2016). Ohio has the highest number of women smoking during pregnancy in the nation (Curtin & Mathews, 2016).

Women often are motivated to quit tobacco use during pregnancy out of concern for their health and the health of their fetuses. However, regional differences persist as compared to the national average of 10% of parturient women smokers, the proportion of Appalachian Ohio pregnant women who continue smoking at time of delivery is as high as 25-35% (ODH, 2012: Wolfe, 2011).

No qualitative studies published in the past 10 years were found regarding smoking during pregnancy in Appalachia. In a qualitative study with adult smokers and former smokers in Appalachian Kentucky, Kruger (2012) found a mismatch between perceptions of smoking cessation interventions and standard interventions by healthcare providers. A qualitative study in Appalachian Ohio among current and former adult smokers found that family and personal independence were especially important factors in this region (Ahijevych et al., 2003).

Outside of Appalachia, Britton and colleagues (2017) found in a qualitative study with rural pregnant smokers and their health care providers that the women felt the providers were somewhat insensitive to their needs. The providers felt that they were doing their best with the knowledge that they had. A synthesis of eight qualitative studies in English-speaking countries with various types of healthcare providers showed that participants felt that the professional role could act as either a barrier or a facilitator to providing smoking cessation support to pregnant women (Flemming et al., 2016). This synthesis also found that the 190 participants across the 8 studies did not think they had adequate knowledge of how to help women in disadvantaged circumstances to quit smoking.

A number of published qualitative studies focused on smoking in the perinatal period in non-Appalachian populations. A systematic review of 38 qualitative studies with perinatal smokers in English-speaking countries found that the major factors influencing smoking cessation were

psychological well-being, significant other relationship, connection with the infant, and appraisal of risks of smoking (Flemming, McCaughn et al., 2015). A qualitative study with 24 pregnant smokers in Scotland found that the social network was an important influence on smoking cessation during pregnancy, but this influence was perceived by the women as providing both facilitators and barriers to quitting (Koshy, Mackenzie, Tappin, & Bauld, 2010). A systematic review of nine studies with the partners of perinatal smokers in English-speaking countries showed that the factors affecting the partner to support or hinder the woman's smoking included similar factors to those found in studies with the women themselves: the couple's relationship, perception of smoking risks, and thoughts of being a parent (Flemming, Graham et al., 2015).

Qualitative interviews with nurses in Southeast Ohio were conducted to gain their insights on the smoking status of women in this region. Nurses are an important bridge for understanding the cultural context and perspective of women in the communities they serve. In this role, nurses can positively impact health behaviors such as smoking cessation among women in Central Appalachia.

This study targets a significant health threat that disproportionally affects rural women (and their offspring) who are poorer socioeconomically, less well educated, and more susceptible, in general, to greater and more adverse health risks. Our study is consistent with the National Institute of Nursing Research emphasis on the design of culturally-appropriate interventions to eliminate health disparities and addresses the recommendation by the Surgeon General's Clinical Practice Guideline for Treating Tobacco Use and Dependence to increase research on smoking cessation interventions in minority populations, especially women (Fiore et al., 2008). This guideline includes the 5As method which is recommended by the American Congress of Obstetricians and Gynecologists (ACOG). The purpose of this study was to bridge the gap between researchers and

Southeast Ohio residents, tapping into the perspective of nurses from Southeast Ohio on the perceived barriers to quitting, perceptions of interventions, and the influence of location and cultural environment on tobacco use to learn the specific needs in Appalachian women.

Method

Data Collection

Purposive sampling was used to recruit nurses who are from Southeast Ohio and who work in this region with women. Care was taken that the participants were not from the same social network and to include nurses who represented different counties in the area and different age groups. Once identified through community sources, the nurses were sent an informational e-mail offering participation in the study. Participants represented 6 counties in the Southeast Ohio region. Semi-structured individual interviews and one small focus group were conducted until saturation of data was reached. Participants completed a demographic and smoking history questionnaire prior to being interviewed. An interview guide was used by the interviewer with questions about the nurses' knowledge and experience related to counseling women about smoking and smoking cessation in general and during pregnancy. Participants were also asked about their perceptions and beliefs regarding smoking in their home county. Participants received a $5 food gift card as a thank-you gift. Interviews were audiotaped with no names or other identifiers used. The University Institutional Review Board approved the study before recruitment began (Protocol #13E036).

Data Analysis

Interviews were audiotaped, then transcribed verbatim. After a comprehensive review of the transcripts, an inductive method was used to code responses with the organizational aid of NVivo 10 qualitative data management software (QSR International, 2012). A Southeast Ohio

native who is a nurse was on the analysis team. Content analysis involved extraction of major concepts, themes, and patterns. Two persons independently analyzed the data. The coding agreement was then compared and differences resolved by consensus of the coding team. The data management software helped to assess how many comments and how many participants were coded under each node to identify the major themes and subthemes.

Sample

Study participants were 15 white female nurses who grew up in Southeast Ohio and still lived in the area. Their age range was 21-44 with an average age of 30 years. Self-reported smoking history showed that 50% were never smokers, 16% current smokers, and 34% were former smokers. Education: 17% Associate's Degree, 58% Baccalaureate Degree; 25% Master's Degree. All of the participants were working as a nurse. They were working in or had worked in a women's health setting within the past 10 years.

Results

Themes fell into 4 major categories: Reasons Women Smoke, Reasons Women Quit, Barriers to Quitting, and Perceptions of Current Interventions. Subthemes revealed ambivalence toward tobacco use, the difficulty of quitting tobacco with smokers in the household and social network, and reactions for people in this region to current smoking cessation guidelines. Table 1 shows themes, subthemes, and representative quotes.

Table 1: Summary of Qualitative Themes

Themes	Subthemes	Quotes

Reasons Women Smoke	Stress Management	"That's what I use for stress relief." "…because that was my stress release, so I'm like 'Somebody better find me a cigarette before I take this computer out to the highway out here'"
	Social Environment	"And I think it's a big part of life for a lot of people in this County… that's just what they do."
	Addiction	"And then they're addicted and can't stop even if they wanted to." "And I would say first and foremost they just want their baby to be healthy. They fight that, between that and the addiction – I think it's the two directions they are pulled in."
Reasons Women Quit	Health	"We all know it's bad for you, I learned that in Kindergarten! That's why it surprises me that so many people my age smoke."
	Financial	"Some say the cost makes them want to quit, but most people seem like they always can get money for cigarettes."
	Pregnancy	"Probably health of their baby"
Barriers to Quitting	Social Environment	"They like to know people and those connections are very important to the sense of security and their place in the world."
	Smokers in the Household	

	Ambivalence about Dangers of Smoking	"Being isolated from friends and family that smoke is a very painful experience and may have material consequences, like on living quarters." "My aunt's obstetrician told her that after a certain time in the pregnancy the stress of quitting is more harmful than continuing to smoke…she quit anyway."
Perception of Current Interventions	Quit Date	"I think setting a goal is helpful, but 2 weeks seems like a very short time to get used to not smoking."
	Total Abstinence	"People I know that have quit has done it gradually." "It wouldn't be as scary to them to think about extending how many hours they could go. This week you are going to extend it this amount of hours, the next weak or after you will stretch it out a little more. I think it would be less intimidating and they would maybe have more hope that they could do it."
	Remove Tobacco from Your Environment	"My family defined your everything…We grew tobacco on the side, in the 80s we could get a good price. At the age of 15 you were allowed to start smoking, all of us, … smoking at once. Still a major part in a lot of my family members' houses."

Reasons Women Smoke in Home County

It is important to consider the perceived benefits of smoking in interventions so that the benefits of quitting are seen to outweigh the benefits of smoking.

Stress management.

So she stopped both times she was pregnant, but she still smokes now. She smokes more now than she ever has. She says that she likes being able to take, she views it as taking a break, so it's kind of like – she's had a stressful day at work, it's like as soon as she gets in the car she lights up a cigarette and that is an instant relief for her.

Many of the participants talked about stress relief relating to poverty and smoking being one of the few coping resources: "like being impoverished – it's harder to be resilient, and harder to have as many coping skills." A number of quotes also mentioned stress relief as a reason for picking up smoking again after quitting, even when using NRT or other meds. "…So I quit for nine years and then I got divorced and started smoking again"

If I don't have it, then I'm a nervous, yeah, I'm a nervous wreck. So you know I think it's just the person. It depends on the person, and I think a lot of people use it for that. I mean I don't know about you guys, but I come from a low socioeconomic background and that's all we had.

Coping with the stresses of poverty was frequently mentioned in the context of reasons for smoking, such as the following comment regarding food insecurity:

Well that's like for me growing up, though, you know. The only time we had food was the first of every month, and then you had nothing towards the end of the month 'cause you were hungry. Then the first of the month you had food. I have food all

the time. My cupboards are full all the time because I make sure that my kids are gonna eat, you know.   So I don't have a shutoff valve anymore. And then my cigarettes stopped me from doing that.

Social environment. "Well I think that it's part of the culture; that people have seen their grandparents, uncles, cousins, friends smoke. And so it is something that I think they have been socialized into for a very long time." "I am a current smoker… and I think all my kids smoke, so I don't think it has broke the cycle any, so."

Some of the comments coded here fell into more than one of the main codes. That is, many of the quotes about the social environment represented both a reason people smoke and a barrier to quitting. Also, many of the quotes show the intertwining of social environment with other reasons for smoking: "And I think it's a big part of life for a lot of people in this County… that's just what they do. That's what I use for stress relief."

A subtheme within the Social Environment supporting smoking was the tradition of growing tobacco in the region: "We have a lot of farmers, … tobacco is a big crop for some of them. Still a lot of people grow tobacco in this area." "My grandparents grew tobacco on their farm, I remember helping when I was a kid. They were good, hard-working people…tobacco money got them through a lot of hard times you know."

Addiction. Addiction was recognized by all the participants as a main reason people continue to smoke. Their comments reflected a sense of powerlessness over nicotine addiction: "And then they're addicted and can't stop even if they wanted to." Questions about the use of nicotine replacement or other medications to aid withdrawal revealed the complicated nature of quitting.

I know I tried the Chantix. It worked until I got really stressed out because my computer crashed and I had a paper due and I'm like 'Okay, somebody find me a cigarette,' because that was my stress release, so I'm like 'Somebody better find me a cigarette before I take this computer out to the highway out here,' but I mean it did work. It [Chantix] worked and so did the patches, but it just seems like that's just my stress relief. That's what I do.

This comment shows how these three major reasons for smoking are intertwined:

…it just seems like it's so prevalent, but so is poverty; so I don't see that their poverty is keeping them from smoking. I don't know why not, because gosh what other things could they do with that money, but I don't think that they recognize, or it's just so normal that they think about, or I guess they're so addicted that they can't stop if they wanted to.

Reasons Women Quit

Health. Health was the first reason everyone gave for reasons that people in their home county want to quit smoking. As a 22-year-old participant put it: "We all know it's bad for you, I learned that in Kindergarten! That's why it surprises me that so many people my age smoke." A number of comments pointed to public health information campaigns and individual health care providers as the impetus to change for health reasons: "A Respiratory Therapist scared my mom. That's why she quit smoking. And whatever he said to her, she quit smoking and she's not turned back."

However, just as many participants stated that they have seen many cases where health warnings were ineffective:

My dad has severe COPD and he still smokes despite the oxygen and everything

else, so it's still a big part. My sisters refuse to quit smoking. They say, yeah, just

sinus problems. They don't have COPD or lung problems.

Financial. The cost of cigarettes was the second most common reason given for wanting to

quit. However, these comments also noted that finances do not seem to really curtail smoking in

this region: "Some say the cost makes them want to quit, but most people seem like they always

can get money for cigarettes." "So almost everyone is on some type of [public] assistance and has

very little cash, but somehow manage to get those cigarettes, so I don't know."

Pregnancy. Pregnancy was brought up by the majority of participants as a reason that some

women quit smoking in their county. "Probably health of their baby. And I would say first and

foremost they just want their baby to be healthy. They fight that, between that and the addiction

– I think it's the two directions they are pulled in." However, these comments included some

doubt: "I would say some quit while they were pregnant, some reduce the amount that they use

when they are pregnant, and some it doesn't affect their use at all."

The participants' comments pointed to a lack of knowledge among women about the dangers

of smoking during pregnancy. The following quote also demonstrates the ambivalence toward

smoking:

They might not realize it is all the way through, you know you can have effects

the entire time, it's not just in the last trimester. You know things like that, I don't

think that they're educated on that stuff and I feel like it is kind of okay, because

hey you could be doing something much worse around here; there are lots of other

things you can get your hands on, and cigarettes are legal.

Barriers to Quitting

Social Environment. The social environment was mentioned by all the participants not only as generally encouraging smoking, but also as a barrier for those who are motivated to quit.

> "They like to know people and those connections are very important to the sense of security and their place in the world. Being isolated from friends and family that smoke is a very painful experience and may have material consequences like on living quarters."

The cultural value of independence was reflected within the comments on social environment relating to acceptance of advice and help to quit smoking: "They are friendly superficially, but generally want to take care of their own problems and don't want to let outsiders into their lives." "And then on top of that I think people are more proud, and so they're not always accessing help that's available."

> And I don't know about y'all, but growing up in my County, I was a troublemaker. If you told me I wasn't gon' do something, I was gon' do it, regardless of whether you liked it or not, and I think that's part of the culture down there: 'Don't tell me what I'm not gon' do.'

Smokers in the household.

I see that when I work with women who are pregnant, they might be very motivated to stop smoking, but their environment is one where it's very difficult not to be smoking. So I'll have a woman tell me that the people in her household are smoking, or at work, or whenever she wants to take a break, it's a smoking break, that's what people are doing on their breaks. So it's part of this social network of smoking that is going on. So that's really difficult. Some of the women that I work with have pointed specifically to their partner, that their partners smoking habit directly affects them.

Ambivalence about the dangers of smoking. The majority of participants alluded to an ambivalence in the region, even among healthcare providers, about smoking. "At the hospital, if you smoke you get a break to smoke, it's understood. My friend lied about being a smoker so she could get a break with the smokers, that's how she started smoking."

These comments extended to smoking during pregnancy: "My aunt's obstetrician told her that after a certain time in the pregnancy the stress of quitting is more harmful than continuing to smoke…. she quit anyway. But, I've heard a lot of women say that." Many participants talked of the belief that smoking is less harmful than other substances: "I think that the focus in that point in time is getting them off other chemicals; alcohol and the harder drugs, and smoking is not viewed as, as big of an issue. Deal with one problem at a time."

Perception of Current Interventions

Most smoking cessation interventions are based on the United States Public Health Service guidelines and tips for smoking cessation. The major tenets of these guidelines include to set a quit date within two weeks, the need for total abstinence (not even a single puff), and to remove

tobacco from your environment (Fiore et al. 2008). The 5As intervention (Ask, Assess, Advise, Assist, Arrange) is part of this practice guideline and is widely used in this region.

Healthcare providers in rural Appalachia have to be trained in the Five As program. They need to know the practical ways of how to help women stop smoking, and not just telling them "you have to call the quit line". For some women that's effective, but some women either can't afford to call the quit line, even though it's a free line, because they may not have free minutes on their phones, and then they might not have the time to sit there on the phone, they might want a more personal interaction. And so I really think it's important to have… and again I think it might be cultural also in rural Appalachia that the face-to-face time is important.

So I think it's hard when all your peers and family members tend to be smokers. I think that's a harder barrier to overcome, because it would be considered the normal. Uhm. I think it's good to anticipate what type of withdrawal symptoms you might have so that they can identify with those, instead of just feeling frustrated.

Tips for successful quitting: total abstinence is essential – I get the theory behind it. I think smoking is a tough one sometimes, and I would say that that would be the end goal, that would be really great. But if we could get them from a pack a day, down to four cigarettes a day that would be amazing. So setting like obtainable goals for them personally.

Positives of Region: Why do You Stay?

Social connectedness. It is important to remember that the culture of this region has many positives. The final question in the interviews regarded the reasons these nurses stay in the region. All of the participants cited social connectedness. A 22-year-old woman replied:

> Well, I don't want to put down [big city], but, it's different there. Down here people are nicer, they care about each other. In this county, I'd be hard-pressed to find a part of it that no one would help me if I was in trouble, car broke down, whatever.

Discussion

Reasons Women Smoke

Stress management is often cited in various cultural and demographic groups as a main reason people continue to smoke despite the health and financial negatives. The many comments in the data that cite stress management as a reason for starting smoking again after long smoke-free periods underlines the importance of psychosocial portions of cessation interventions. One would think that once the physical nicotine addiction is overcome, there would be no reason to return to smoking. This issue supports the importance of psychological addiction in smoking behavior (Japuntich et al. 2011). The stresses of poverty were included in this category as factors that affect smoking behavior.

Our participants emphasized the role of the social environment to continue smoking more than as an anti-smoking force. Reports of ambivalence toward smoking, even during pregnancy and among some healthcare providers, emphasizes the pervasive acceptability of smoking in this culture. Windsor et al. (2014) found low receptivity to trying to quit among Appalachian women who smoked during pregnancy. This reluctance to even try to quit during pregnancy seems unusual in our time.

Environmental smoking and attitudes of family, friends, and co-workers toward smoking in a cultural group have long been shown to impact individual smoking choices. Partner support and availability of general support has been associated with success in smoking cessation, while a social network containing smokers deterred the maintenance of cessation (Mermelstein et al., 2000). Our results agree with the qualitative findings with pregnant smokers in Scotland that the social network was an important influence that was perceived by the women as providing both facilitators and barriers to quitting (Koshy, Mackenzie, Tappin, & Bauld, 2010).

There are no published research findings that describe potential differences in benefits of smoking, barriers to quitting, or preferences for interventions between Appalachian men and women. However, the context of smoking may differ between genders. Appalachian women have higher risk of poverty and less educational attainment than men (Thorne, Tickamyer and Thorne, 2005). Therefore, the smoking cessation needs of Appalachian women may differ from men.

Reasons Women Quit

Our results agree with a synthesis of eight qualitative studies in English-speaking countries with various types of healthcare providers that showed that participants felt that the professional role could act as either a barrier or a facilitator to providing smoking cessation support to pregnant women (Flemming et al., 2016). These healthcare providers pointed to the importance of maintaining a positive patient relationship while navigating the complications of the relationship between smoking and social disadvantage. Regarding pregnancy as a reason to quit, appraisal of the risks of smoking has been found in a number of qualitative studies with perinatal smokers in English-speaking countries (Flemming, McCaughn, et al., 2015). A systematic review of nine studies with the partners of perinatal smokers in English-speaking countries showed that the factors affecting the partner to support or hinder the woman's smoking included similar factors to those

found in studies with the women themselves: the couple's relationship, perception of smoking risks, and thoughts of being a parent (Flemming, Graham, et al., 2015).

Barriers to quitting/perception of current interventions. Differences in use and beliefs about smoking among Appalachian Ohio women are associated with family factors, an entrenched cultural use of tobacco, poverty, and other influences associated with health disparities. Specifically, rural Appalachian women have less access to community services than women who live in metropolitan areas, and frequently lack transportation to the nearest services (Wewers et al., 2012). Appalachian women seem to have fewer non-smoking role models, and often do not get social support from family members to quit tobacco (Thomson et al., 2016). The only qualitative study found that was conducted in Appalachian Ohio among current and former adult smokers found that family and personal independence were especially important factors in this region (Ahijevych et al., 2003). In Appalachian Ohio, an individual's change in behaviors seem to be rooted in the home, family, and trusting relationships. These distinguishing characteristics may require a more population-specific model of smoking cessation intervention in Central Appalachian women.

Many participants talked about the history of tobacco farming in the region including personal memories of family members' and ancestors' involvement in tobacco production. The public health efforts that vilify tobacco and shame smokers may backfire in this region where tobacco is not only a behavioral tradition, but also an agricultural tradition. When tobacco is being depicted as dirty and shameful, many people in this region may be thinking of their grandparents' or parents' tobacco farm.

Some of the tips for quitting smoking given in the Public Health Service guidelines (Fiore et al. 2008) may be more discouraging than helpful for people in this region. For example,

financial and social factors in this area may make limited choices for who is in the household. Thus, telling a woman to not let anyone smoke around her is putting an impossible expectation on her in many cases. Other factors in the guidelines may be less helpful for people in rural Appalachia, such as the financial incentive of spending less on cigarettes. This financial incentive seems to be less convincing in an economically disadvantaged population, but the reasons for this are unclear (Farrelly & Shafer, 2017).

Our results support a cut-down-to-quit model of smoking cessation, which has shown success in Appalachia (Windsor et al, 2014). Although gradual cessation is not part of the National Health Service guidelines, Seybold (2012) showed that reduction of smoking during pregnancy improved outcomes in a sample of Central Appalachian women. Graham (2014) showed in a meta-synthesis that most of those interviewed found reduction for gradual cessation to be useful among pregnant women in English-speaking countries.

Self-reported smoking history of the nurses in our sample showed that 50% were never smokers, 16% current smokers, and 34% were former smokers. No data was available regarding the smoking rates among nurses in the region of this study. However, comparison of our sample with national data from healthcare providers reveals that the smoking rate of these local nurses is higher. Sarna (2014) found that 7.09% of registered nurses were current smokers, 16.77% former smokers and 76.14% never smokers in a national sample of healthcare providers.

There were a number of comments from participants that referred to smoking being a lesser of evils that may decrease illegal drug use. In addition to the recent national focus on opioid addiction, in the last 2 years the region in which this study was conducted has been especially scrutinized. Deaths from illegal opiate overdose have increased sharply in this region over the last four years (ODH, 2017).

Why do you stay? The participants' answers to this question reveal the positive forces at work in rural areas that could be harnessed for favorable health behavior change. While this region tends to be more challenged regarding material things, it is rich in tradition and wisdom. The participants' comments revealed a deep connection to their home county and the people of their community. There is hope to change smoking behavior for the better in this region despite its troubling health indicators. While Wewers et al (2012) found that younger age (18 years-30 years) was a risk factor for smoking, Chertok and Haile (2017) found in a representative Central Appalachian sample that younger women were more likely to engage in positive smoking behavior change. The tight-knit social networks typical of rural areas can be engaged for favorable change in smoking and other health behaviors.

Limitations

Limitations of this study include a purposive sample. Care was taken in sample selection to include nurses who represented different counties in the area and different age groups. However, the study was conducted from a university setting, which might have biased who was known to the researchers for recruiting purposes. This may have resulted in the participants' levels of education being higher than expected for nurses in this area. Our sample educational breakdown was 17% Associate's Degree, 58% Baccalaureate Degree and 25% Master's Degree. In Ohio, 2015 RN Workforce data showed 52% Associate's Degree, 36% Baccalaureate Degree and 11% Master's Degree (Ohio Board of Nursing, 2015).

Conclusion

Central Appalachian Ohio women are among the nation's highest risk groups for poor health outcomes associated with tobacco use. Addressing these challenges in smoking cessation activities with these women is worth the chance to positively impact the increased smoking-related

morbidity and mortality. According to the information gathered, smoking cessation interventions should particularly incorporate issues salient to this population such as the relative acceptability of smoking in the social environment, smokers in the household, and the desire for gradual smoking cessation. The data gathered suggest that smoking behavior is broadly similar to studies in other populations regarding reasons for smoking, reasons for quitting, and barriers to quitting, although the cultural and regional context of these factors may increase the challenge to smoking cessation. People living in rural Appalachia encounter multiple competing demands while experiencing a particularly strong influence of family in a more collectivistic culture. As such, smoking cessation interventions should account for cultural and regional context to promote a more acceptable and accessible program specific to the population needs.

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