

# Social determinants of smoking in women from low-income rural backgrounds: Findings from a photovoice study

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## Background

Smoking is well recognized as one of the most preventable causes of death and disease in the United States (U.S.), accounting for approximately 480,000 deaths each year (Centers for Disease Control and Prevention [CDC], 2014). In addition, the American Academy of Addiction Psychiatry (AAAP, 2018) estimates that approximately 20–30% of individuals experimenting with cigarettes will meet criteria for tobacco use disorder within their lifetime while 60–80% of current cigarette smokers manifest classic drug dependence criteria. Associated annual healthcare cost of smoking are approximately 133 billion dollars, with the additional cost in lost productivity estimated at 156 billion dollars annually (CDC, 2014; United States Department of Health and Human Services [USDHHS], 2014). Although recent national rates of cigarette smoking in adults have declined from 20.9% in 2005 to 13.7% in 2018, there remains significant disparity in smoking rates among rural populations (Creamer et al., 2019).

Cigarette smoking in rural populations is 26% compared to 19.9% in urban populations, with an alarming 22.3% of rural women smoking cigarettes during pregnancy compared to smoking in 10.1% of pregnant urban women (National Network of Public Health Institutes [NNPHI], 2019). Using 10 years of recent data from the U.S. National Survey on Drug Use and Health, rural women were found to have higher smoking rates, an increased prevalence of nicotine dependence, lower odds of successful smoking cessation, and higher rates of smoking-related diseases than urban women smokers (Nighbor et al., 2018). In addition, use of cigarettes and tobacco products is more prevalent in rural residents with mental illness and substance use disorder when compared to urban residents. Approximately 43.8% of rural residents with mental illness and 65.1% of rural residents with substance use disorder report using cigarettes and tobacco products compared to 33.7% and 53.7%

respectively in their urban counterparts (NNPHI, 2019). Recognized in the *Diagnostic and statistical Manual of Mental Disorders, 5th edition (DSM-5)*, tobacco use disorder may interfere with life obligations, lead to hazardous situations, reduce social engagement, manifest strong cravings and greater use than intended, lead to an increased need for tobacco, and lead to withdrawal syndrome during attempts of cessation (American Psychiatric Association, 2013). The interlacing of higher smoking rates and tobacco use disorder with factors such as poverty, diminishing employment opportunities, lower educational levels, and less access to healthcare resources contribute to rising health disparities and a declining quality of life in rural populations (Council, 2012; Daniel et al., 2018).

Although studies have shown that poor health outcomes in disadvantaged areas are related to socioeconomic conditions such as lower educational outcomes, poverty, and unemployment, few have addressed the social context of smoking in low-income rural women (Mitchell et al., 2015). Within the scope of this paper, social context refers to circumstances or events that form the environment within which smoking takes place, including cultural and social networks (Poland et al., 2006). Social networks are the structural underpinnings within a web of social relationships that provide social support, social influence, companionship, or social capital depending on their structural characteristics (e.g., homogeneity, density, reachability, strength, density, directionality, and reciprocity) (Berkman et al., 2014; House et al., 1988). And, social support refers to the functional component of social relationships that is consciously provided and intended to be helpful to the recipient (Heaney & Israel, 2008). Social support may be in the form of emotional support (empathy, love, and caring), instrumental support (tangible resources and services), informational support (advice and suggestions), or appraisal support (constructive feedback for self-evaluation) (House, 1981). Although the role of social support in

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smoking cessation research is not new, there has been a lack of emphasis on understanding the specific social support needed within the unique social context of this group of women who have not sought out or responded to current smoking cessation interventions (Mitchell et al., 2015). In this study, photovoice methodology was used to better understand social meanings embedded in the cultural and social networks, and central components within the social context of rural low-income women who smoke. Photovoice is well suited for this study of disadvantaged and marginalized women, as it can be empowering to participants and provides the investigator with a unique perspective of the social and cultural aspects of the realities facing rural low-income women who smoke.

### *Smoking and social context*

Social determinants of health are broadly recognized to encompass the conditions, environment, and events that shape differences or disparities in health outcomes influenced by the distribution of money, power, available resources, and employment opportunities (Wang et al., 2013; WHO, 2008). More specifically, research has shown place to be an important contextual determinant of smoking behavior and tobacco use disorder in populations that live in disadvantaged areas and experience feelings of exclusion and stigmatization (Pearce et al., 2012; Probst et al., 2004; Stead et al., 2001). Place, it should be noted, is not limited to location, or setting, but is a multidimensional set of 'situated' social dynamics that reflect the recursive power relations between agency and structure (Frohlich et al., 2001; Poland et al., 2006). Through research on the social context of smoking, "distinctive cultures emerge in specific places that govern how people behave and the meanings that are derived from experience" (Poland et al., 2006, p. 61). Agency, or the ability of people to act on their own volition and sense of identity, is a process that analytically contextualizes past experiences with future and present possibilities to determine social engagement; and structure is the set of rules and resources within a social context (Emirbayer & Mische, 1998; Frohlich et al., 2001).

Powerlessness, low self-esteem, and stigma are linked to poor rural populations with high rates of smoking and poor health outcomes (Cattell, 2001). As social meanings, rules, and resources surrounding smoking evolve within social structures, membership requirements in social networks that provide social support and social connectedness may change, altering the social identity connected to smoking. The impact of these changes on the smoker's sense of identity, or agency, has consequences on social engagement, access to resources, and position of power within their social context. In their study on smoking within the social context of marginalized and disadvantaged populations, Poland et al. (2006) define power as the ability of a person or social group to act in a manner in which one set of interests prevails over another, playing a significant role in the control of material, human, and ideological resources.

As health disparities remain significant in rural low-income women, research on how health behaviors are impacted by factors associated with social context will open doors to develop and implement interventions that target improvement in quality of life and perceived well-being for this group of women. Health researchers must remain open to innovative approaches that empower marginalized groups to identify needs and goals that are unique to their social context; and acknowledge research findings that expand ways of thinking about strategies to successfully address long standing health disparities. The aim of this study was to explore social and cultural factors that give meaning to smoking in rural low-income women and look deeper into the relationship these meanings, social support, social networks, and social identity have in their decision to smoke or to attempt smoking cessation.

### **Method**

This study incorporates interpretive, focused ethnography using

photovoice as the primary method of inquiry (Cruz & Higginbottom, 2013; Oliffe et al., 2008). Considered a form of participatory action research, photovoice provides a glimpse into the participant's world, providing opportunity to collect rich verbal data as individuals reflect on their photographs during semi-structured interviews (Drew et al., 2010; Oliffe et al., 2008; Wang & Burris, 1997). Participants are acknowledged and empowered as experts when producing photographs that are reflective of their reality; and are more inclined to share deeper social and cultural meanings (Patton, 2002; Prosser, 2011). Combining self-titled photographs that participants produced within the context of their smoking experiences with verbal dialogue can enhance insight into how being "a smoker" create social identity within their socially structured positions (Packard, 2008; Wang & Burris, 1997). Using ethnographic methods, other significant data collected during this study included detailed field notes; local artifacts; investigator-produced photos; community observations by the primary investigator, interactions with smokers at county and community events, meetings with public health and social services representatives in the communities, and conversations with vendors at local vapor rooms and tobacco stores.

### *Setting and sample*

After receiving approval from the university institutional review board, 17 geographically homogenous women between the ages of 25 and 57 were recruited over an 8-month period using purposive sampling with complementary snowball sampling as a means of soliciting additional participants. Sampling was limited to three rural counties in a southern, mid-Atlantic state with higher rates of smoking, poverty, and unemployment when compared to national and state statistics. Women who smoked, were between the ages of 25 and 64, reported household income at or below federal poverty level, and reported smoking at least 100 cigarettes during their lifetime were eligible to participate if they could read and speak English and were able to physically operate a camera. Age of the women and poverty levels used as eligibility criteria in this study are consistent with criteria used in the 2014 National Health Interview Survey annual smoking report published by the CDC (2014). The primary investigator completed screening of participants. Recruitment activities included distribution and posting of flyers in local shopping areas and gas stations where cigarettes were commonly sold, local eating establishments, and healthcare facilities that serve this population of women. Public health nurses and social workers assisted with placement of flyers in their facilities. Women who completed the study were given a 50-dollar gift card as compensation for their time and the information they provided.

Given the nature of the photos to be collected, as part of the consent process, the researcher was careful to explain that participant produced photos may be shared in print or electronic media as part of research presentations, professional conferences, and published manuscripts in peer reviewed journals. Any markings that identified the county of residence or other individuals in the photos would be blurred. The consent made clear that, in all cases, pseudo identifiers would be used as personal identifiers, and geographic identifiers that may be captured in photographs would be blurred, with pseudonyms used to refer to the geographic area. All participants agreed to the use of self-produced photos for the study and most, without prompting, expressed their desire to have others learn from the information they provided and expressed their eagerness to generate and send photographs to the investigator.

As with most ethnographic studies, what is initially considered an effective sample size can evolve once fieldwork begins (Miles & Huberman, 1994). Recruitment of participants for the study was challenging. The initial proposed sample size of 30 was adjusted based on the informational richness, fullness of the data collected, and the extent to which redundant thematic patterns emerged related to common experiences disclosed by the 13 women that completed the study; the numerous observations and field notes from local county fairs, farmer's

markets, vaping businesses, convenience stores; and the rich data collected during the researchers visits to the participants homes (Geertz, 1973; Guest et al., 2006; Onwuegbuzie & Leech, 2007; Sandelowski, 1995).

### Data collection

In accordance with a naturalistic approach to data collection, the study was structured over 3 phases (Angrosino, 2007; Fetterman, 2010). Within each of the three counties used to recruit women for this study, Phase I included observation by the primary investigator of the physical and social environments, observation of resident activities and styles of communication, and collection of local artifacts. Phase II included the initial meeting and audiotaping of a semi-structured interview with screened participants in their homes (Table 1).

To maintain anonymity and privacy, each participant selected a personal pseudo identifier to be used during interviews and was assigned a study identification number to be used during the study. During this initial meeting, participants were provided general guidelines for completing the study photographs and provided with a small inexpensive digital camera if they did not have a phone with photo-texting capabilities (Table 2). Women using their phones titled and sent photos electronically throughout the following 2–6 weeks, while participants using digital cameras contacted the investigator when photos and titles were complete. Phase III included a second visit by the primary investigator to the participants home to complete a follow-up semi-structured interview. The participant produced photos were used during the second interview as a means of eliciting deeper discussion and gaining insight into what it means to smoke and be a smoker.

### Data analysis

Data analysis followed an iterative process, moving among observational fieldnotes, memos, narrative data, photographs, and researcher self-reflection to capture themes, patterns, and phenomena (Angrosino, 2007; Fetterman, 2010). Interviews were transcribed by a professional transcriptionist from the audio-recorded interviews. Each transcript was proofread a minimum of two times against the original recordings by the primary investigator. Initially the data were explored for nuances and complexity of participants' stories, focusing on the phenomenon of

**Table 1**  
Selected interview question.

Initial interview questions
Tell me what it's like living here?
When you started smoking, what was it like for you?
What is it like now?
Imagine you were one of those non-smokers, how would living here be different?
What attracted you to this study?
How do you see yourself taking these photos?
Ending with questions/comments/information on contact and follow-up activities
Photo follow-up interview questions
What was it like taking these pictures?
Show me your favorite three photos.
What was it about these photos that make them your favorites?
What do these photos tell me about you?
What about your least favorite photos?
Tell me about something you wish you could change in them?
What do you want the photos to tell people about being a smoker?
Are there photos you took and decided not to share? Tell me about those.
What about photos you wish you could have taken, tell me about those and why you would have liked to take them.
Tell me a story about a situation where you found smoking most satisfying.
What about a situation where you felt uncomfortable being a smoker?
Look into the future, are you smoking? Has anything changed?
As a study participant, how do you feel taking photographs and discussing them compared to just completing an interview.
What have you enjoyed the most about being in this study? The least?
Any final thoughts or comments you'd like to add?

**Table 2**  
Participant guidelines for photographs.

These photographs are being collected so you can share with me and others what it means to be a female smoker in rural settings. Please take photos that you do not mind sharing with me and others. The pictures you create will be discussed during our next meeting and shared with others that are interested in understanding smoking from your perspective.

Try to take some photos each day. Information will be more meaningful if photos are taken over time rather than all at once. Also, please give each photo a title, one that is meaningful. Just as most paintings and pieces of art have titles that represents the artist's vision, please title your photographs in a manner that gives them meaning.

Here are guidelines for the pictures I would like you to take. Please take pictures YOU feel will help with this study.

\*\*You **must always** ask permission of other people included in your photographs who have not consented to be subjects in this study and inform them that they will be blurred as a means of de-identification.

- 3–4 Photos of yourself smoking
- 3–4 Photos of smoking with those closest to you
- 3–4 Photos of smoking during social activities
- 3–4 Photos smoking in community
- 3–4 Photos you think are important or valuable. Your Choice!

Please contact me if you have any questions. THANK YOU!  
xxx-xxx-xxxx or xxxxx@email.xxx

smoking in various aspects of their lives, which included identity development and the socio-cultural meaning of smoking (Goodall, 2000; Saldana, 2013). To facilitate thematic and theoretical coding, transcripts and participant photos were analyzed using ATLAS.ti version 7.5.6 for Windows (Friese, 2014). While reviewing the data, memos and notes were written on transcripts, in investigator notes, and entered into the analytic software. Descriptive, thematic, and theoretical coding were used to provide insight into variations and patterns reflective of the women's experiences, relationships, social and cultural beliefs, and behaviors within the social context of smoking (Saldana, 2013). Participant photographs were also analyzed for patterns of content, the context in which the photographs were produced, and any visible power relationships reflected in the images (Banks, 2007). Initial coding of transcripts and photographs in ATLAS.ti, was descriptive, resulting in numerous codes that were structurally merged into descriptive categories (Friese, 2014). Secondary coding was thematic, focusing on meanings within the data, which were then further analyzed for theoretical constructs (Saldana, 2013). To increase rigor, a doctoral prepared researcher experienced in qualitative coding independently coded five complete sets of participant data using ATLAS.ti, which was compared to the principle researcher's codes (Sandelowski, 1986). Codes from each of the coders were compared for consistency of patterns and themes. When differences in coding occurred, the context of the data were reviewed to assure that the participant's perspectives were represented instead of the coders' interpretation and agreement was achieved.

In addition, experiences within communities, especially in tobacco stores, vaping rooms, county fairs, and observations while in participants homes were used by the researcher to further explore meanings and experiences that participants described. During this time, the primary researcher took photographs of events, communities, and the general rural environment. The community observations and experiences throughout data collection were used during the analysis portion of this study to validate findings or move back into the data for further discovery.

### Results

Seventeen women met the study enrollment criteria and were

consented for participation by the investigator. Of these 17 women, 13 completed both interviews and submitted photographs, which resulted in 26 interviews and 196 participant-produced photographs used in the analysis of these findings. Demographic and smoking information on the 13 women who completed all phases of the study are provided in Table 3. Each woman was treated as an independent participant, interviews were conducted separately, and each woman provided photographs independently of other participants.

Of the 13 women in this study, 11 were African American. Recent data on smoking rates indicates a national smoking rate of 16% in non-Hispanic white women while the national rate of smoking in African American women is a lower rate of 13.5% (American Lung Association [ALA], 2019). Interestingly, previous studies have found that African American women initiate smoking at a later age, have less success with smoking cessation when compared to other populations, have a higher rate of cigar use in high school, and prefer menthol cigarettes over non-mentholated cigarettes (Bauer, 2016; Rolle et al., 2016). As noted in Table 3, participants in this study show similar smoking histories and preferences of tobacco products.

Seven themes evolved from the analysis that expand our understanding of what it means to be a smoker within the social context of low-income rural women (Table 4). Although the interview questions did not specifically ask about rural life, patterns and themes disclosed during narratives and review of the photographs related to social engagement, social identities, and the meaning of the women's social relationships within the context of rural living. Feelings of isolation were associated with the geographic nature of rural living and the stigmatization they described when they discussed smoking. Prominent narrative themes include relationships between smoking and their roles associated with family membership, being a good mother, and their

**Table 3**  
Demographics of participants.

ID	County	Age	Race <sup>a</sup>	Marital status	Type brand of cigarette	Start age	What was it like for you when you started smoking?	# smoke in house	Efforts to quit
1 Bug	B	43	AA	Married	Newport	21	Girlfriend suggested it during stressful divorce	2	Patches, Nicorette gum, Chantix
2 Myoshi	C	57	AA	Single	Newport	24	Desire to be part of surroundings in city life, practiced smoking	1	
3 Kim	C	33	AA	Single	Cool	16	Mom and dad both smoked, sneak them & go outside to smoke.	0	Patches; chewing gum, mint & cinnamon candies, stopped during 1st pregnancy & through part of 2nd pregnancy
4 Dee	A	48	AA	Divorced	Newport 100s	19	Lighting cigarettes for boyfriend; everybody was doing it	0	Patches; pregnancy
5 Melissa	C	48	AA	Separated	Menthol	13	Started running the street & being rebellious when parents divorced.	0	Cold turkey: quit during 1st pregnancy; quit shortly when 2nd child sick
6 Missy	C	34	AA	Single	Newport 100s	23	Hanging with wrong crowd; wanted to blend in & be like other folk thinking it was cool. Didn't smoke in HS.	0	Quits when daughter out of state with father, chews gum and eats hard candies
7 Journey	C	53	AA	Single	Newport 100s	13	Visiting family & experimenting with different things, got into drugs, and then smoking; sneaked cigarettes with other girls.	1	Patches, now, try to slow down. Smoke 1/2 cig, put it out and smoke other half later.
8 Deasia	C	25	AA	Single	Newport.	14	Hanging out with "bad" girl; sneaked them from my mom. Thought I'd be cool if I smoked.	1	
9 Sandra	C	50	W	Divorced	Marlboro	15	Sneaked from father when 10-11. Unhappy childhood, running away smoked by myself growing up, no friends.	1	Nicorette gum; Wellbutrin; hypnosis; patches
10 Sarah	C	25	AA	Single	Newport	18	Others smoked at job, stress of customers; social life	1	Stress ball; rubber bands in hand; music.
11 Mary	C	63	AA	Single	Newport 100s	18	Hanging out with group of girls from work; partying; trying to look grown	0	Slow down
12 Big Mama	C	47	AA	Separated	Newport	17	Girlfriends and cousins encouraged during stress of father's death	2	None
13 Ashley	C	26	W	Single	Newport	17	Older cousin gave her first one when 8; trying to be cool; sneaked cig from mom	1	Quit 5-6 months during 1st pregnancy.

<sup>a</sup> Race/ethnicity: AA = African American, W = White.

**Table 4**  
Common themes from narratives of rural low-income women that smoke.

- Feelings of isolation
- Struggling day to day
- It's relaxing
- "Looking good" and empowerment
- Family support and expectations
- Being the good mother
- Hope for a better life

need to feel empowered within their social environments. As established in previous smoking studies, women in the current study described that smoking is used as a tool for relaxation and stress relief (CDC, 2001). In the following sections, these seven themes are described, using examples from women's narratives that are referenced using the women's self-selected pseudo identifiers.

#### *Feelings of isolation*

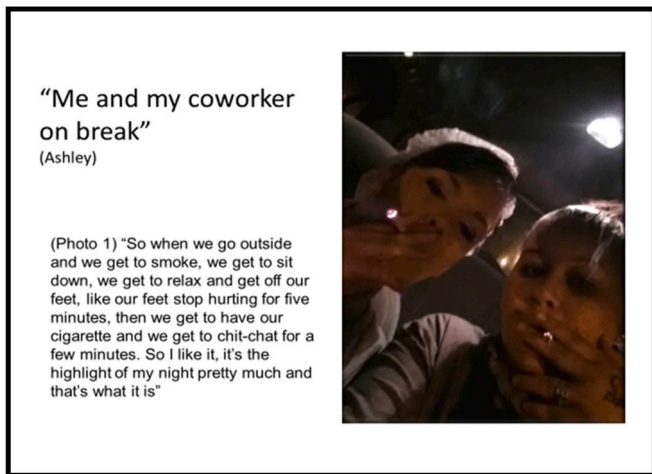
The social significance of smoking for low income women living in economically deprived rural areas were described within the context of the hardships associated with rural life. Predominantly, feelings of isolation and smoking were embedded in the women's narratives, as they discussed the geographic nature of rural living, their limited social engagement, or their smoking behavior. The lack of adequate transportation kept them physically isolated from socioeconomic and health resources, disenfranchised them from social support systems, and subjugated them to additional social isolation. Getting to a doctor's appointment or to a county agency that offered financial assistance was challenging and required the women to have cash when paying another



individual for transportation. Without money for transportation, the women were unable to access resources, which again perpetuated isolation. Lack of transportation, limited financial means, and unemployment were barriers for developing new social networks or sustaining established ones that provided much needed social engagement and social support. Ashley, a single mother who participated in the study and was struggling to get custody of her children had recently found a night shift job in the cafeteria of a soup company, described the added social benefit of having a job and taking a smoke break with her co-workers.

So, we really don't have time to really communicate with each other (during work). So when we go outside and we get to smoke, we get to sit down, we get to relax and get off our feet, like our feet stop hurting for five minutes, then we get to have our cigarette and we get to chit-chat for a few minutes. So, I like it, it's the highlight of my night pretty much and that's what it is.

(Photo 1, Ashley)



As she described this picture as one of her favorite photos, her shoulders were held back and she smiled while taking a drag from her cigarette. Another young single mother in this study with no job, who reported little social engagement outside her home stated, "I have one friend. And I go to her house every once in a blue moon because she work and stuff. I really don't do nothin' but sit around the house and talk to my mom (Deasia)." For some women, church provides an opportunity to socially engage and keep them "out of trouble." Interestingly, participants did not speak of church as a social activity, but as a means of keeping out of trouble, a way to control "anger" that may have caused them to get into "trouble," or a mechanism they planned to use when they chose to quit smoking. As one participant explained, "Church, I love it ..... I try to be there when the door is open. [chuckling].... Stay out of it (the drama), and other stuff (Missy)."

Smoking "by myself" is consistent throughout the women's narratives. Feelings of shame and isolation associated with the stigma of smoking, influenced where they smoked, when they smoked, and with whom they smoked. Their responses illustrated how the social identity of being a smoker affects social engagement and their feelings of isolation. For example, the women who did not live with their mothers were uncomfortable smoking around them. They voiced hesitancy about smoking around mothers, still fearing their mother's disapproval. Moreover, none of the women smoked at church, fearing that smoking on or near the church grounds would "defile" the church and be "disrespectful" to God. Embedded in their conversations about faith, church, and health, the women referred to their bodies as the "temple of God" and feelings of spiritual shame and possible rejection by the church. In addition, they avoided smoking while out in public places. Having "that hanging out your mouth" is "unladylike," "ugly," or

"trashy." The women wished to be empowered by projecting a socially constructed identity of being a "lady," which they felt brought respect and social position in their community. Some women took extra effort to conceal smoking by not smoking a cigarette when the smell might remain on their clothes, commenting it "stinks," "smells bad," and is "disrespectful" of others.

### Struggling day to day

When asked "Tell me what it's like living here?" all the women, except for two who were new to the state, referred to the closure of industry in their county as having significant impact on their way of life. As industry closed, the vitality of their towns and opportunities for employment diminished. Local jobs that remained were less than ideal as described by one participant feeling frustrated by working conditions and the lack of jobs, "It's terrible. I was working at a little store and the roof fell in, I was working there three years. So last year.... I haven't worked none this year, I haven't found a job or nothin' (Missy)." With industry closing, women engaged in travel to surrounding cities and counties to find work, which adds transportation expenses and increases employment barriers when there is no car.

Unemployment in the community increased the rate of poverty and created hardships. As described by one participant who drives a school bus part time, poverty in her county was pronounced for some women and children on her bus route.

Well some of them, their clothes haven't been washed in days. They don't have coats, some of them get on the bus their shoes are too big. I mean, and that shocked me because I'm not used to seeing that, and that's just being honest.... It's like.. almost kind of like... this county is reverting back instead of progressing forward.

(Bug)

In addition, local businesses that previously provided residents with social activities or opportunity for community involvement were closed, leaving little opportunity for local youth and residents to expand social networks and group memberships that fostered personal growth and community involvement. Youth and young adults expressed that there was "nothin' to do", which they believed increased the violence associated with drug use and encouraged "rivalries" between groups of people from different areas of town. Journey, one of the participants, describes how her community has changed;

Like jobs...jobs... a lot of gone jobs and then well, (sigh) when I was 24-25 it was kind of fun then cause there was like people much nicer, like we go to cook outs and stuff like that, with all the shooting stuff now... so that has changed, there is no jobs or nothin' for the kids to do, so you have to entertain them, near me there are a lot of kids smoke weed and smoke cigarettes and just a lot.. it's just, it's kinda boring, I think this town right here is like for retirement kind of really, it because there is nothing really to do but...

(Journey)

As pictures were discussed between the researcher and the participants, smoking was described as a "way to fill the void" as a result of the economic and social void of "no job" and "nothin' to do." Smoking, because "there's nothing else to do," or as a way of "dealing with the stress of worrying about bills," was a universal theme across interviews.

Beyond the struggle of unemployment and poverty, all of the women faced problems related to drug use, family health, housing, personal health, or safety that challenged their ability to cope. Many had mental health disorders such as depression, bipolar disorder, anxiety, and schizoid personalities that generated additional stress and they described to the researcher as triggering their urge to smoke. For example, Kim was an unemployed single mother of five young children who spent most of her day alone with her children and who smokes

approximately 15–20 cigarettes per day.

Yeah, when I'm upset *now* umh, I have anxiety, I have depression, I take Prozac for that, but sometimes when I get upset or I get nervous or I get excited I come smoke and it's like its calming me down.

(Kim)

Family violence compounded issues of health and financial stress for Myoshi. After two weeks in the hospital for revascularization surgery, she explained to the researcher how she had returned home to become a victim of family violence; being “beat up” by one of her daughters for her pain pills, requiring a return visit to the hospital. Although she responded poorly to the physical attack and emotional turmoil, she remained hopeful that she could stop smoking.

You know, so, when I left the hospital then, I just gave up, I am tired of the people treating me in that way. You know that stress and depression set in on me so bad. For the next three, four days I was just like stressed, just stressed, and depressed because this was a family member and then I just started smoking again, like crazy. So, that's how I started back this time, but me and my daughters are working on me quitting again. We really are working on that.

(Myoshi)

The concern and struggle for safety was clear. Most of the women lived in neighborhoods or county areas where violence is a familiar. Missy shared her experiences of the day her 14-year-old son was shot five times while walking through a neighbor's yard and the shooting death of his 13-year-old friend during the same event. Big Mama revealed that her “homeboy” was shot in the hand during a “drive by” one evening while sitting on the porch. Deasia described a domestic quarrel with her boyfriend and “busting his eye” as she hit him with his phone. The women spoke of hearing sounds of gunshots and routine shootings from “rivalry” groups in their communities. Some women relocated to safer neighborhoods but could still hear distant sounds of gunshots, others were actively looking for safer housing for their families, and some made no mention of changing residence. With little opportunity for outside social engagement or social networking, the women stayed close to home, often inside, safe, and smoke for “something to do to fill the void.”

#### *It's relaxing (just breathe)*

Of no surprise, smoking was described by every participant as “relaxing,” something that “calms my nerves,” or “a stress reliever.” Throughout the study, women provided descriptions of situational experiences that provoked the need for a cigarette. For example, many women described needing “the taste” of the cigarette at specific times of the day or during stressful events. After one or two puffs, the “taste” was satisfied and the need for the cigarette was no longer physically present. However, during periods of isolation, boredom, or situations that were interactively stressful, they found themselves “smoking just to smoke.”

The calming, relaxing, and stress relieving aspects of smoking as a breathing technique were described. For example, during our second interview, when asked to describing what she liked most about smoking Kim responded; “Yeah when I am stressed and I am smoking I get the nicotine and the breathing in and out I guess it is some kind of relaxation for me...” Another participant describes the relaxing feeling of breathing and smoking when under the stress of completing an exam for school;

Yes, it was a timed test as well. So, I was sitting there I was looking for the answer and I was searching through notes and I was like oh my god, I'm never going to find this answer. I got five minutes. I need this answer. I'm not sure about this. I need this one to be right and I was like ... “just breathe, just breathe, you can do this”. And I was like, you know what, just light a cigarette and take a pull and I'm

seeing and keep looking, take another pull and then there was like “boom”. There was the answer because I calmed down and take my mind off the time, which at the end of it, I did find the answer, I still had one minute left, so I was like okay, shew...good.

(Sarah)

And, as Ashley described smoking as the “highlight” of her day she emphasized the breath; “Stress, anxiety, whatever, it just – it helps, you actually stop and learn how to – (takes a deep breath) and just take a breath in even if it's cigarette breath in it's still a breath in for you to like to sit collect your thoughts, you know, get yourself together and it just, it helps, it helps me at least, it helps a lot (Ashley).”

#### *“Looking good” and empowerment*

Looking good was feeling good to the women in this study. When asked to select photos “most liked,” most women quickly selected photos that projected “looking good,” “happy,” having a “good hair” day, or in general having a “good day.” The uplifted tone of voice, smiles, straightened body posture, and engaging mannerism the women projected during conversations of their favorite photos reflected moments of confidence, feelings of belonging, increased sexuality, empowerment, and personal satisfaction. On the other end of the spectrum, the women's “disliked photos” elicited comments such as “bad hair,” “un-ladylike,” looking “ugly,” and described feelings of being “stressed,” “tired,” or “worried” as they attempted to meet the expectations of others while struggling to find the energy necessary to provide for themselves and their families. The task of looking good not only encompassed physical appearance, it was an “attitude,” and knowledge of sociocultural rules for “looking good.” For the older women in this study, smoking was something considered unacceptable in public settings and not to be spoken of in front of select family members, friends, or at church. When asked if her great grandchildren knew she smoked Myoshi responded;

No, because I was brought up, like you know, my grandparents, they drank. We never knew or saw them drink, I mean, my grandmother. My grandfather, we knew that he had been drinking, but to this day, and he's dead and gone, I can tell anyone that I never saw him drink. So, umh... It was just instilled in me, it's not what you do, it's how you do it.

(Myoshi)

Embedded in this statement are meanings associated with Myoshi's social identity as a smoker, the value she placed on keeping “it” from her young family members, and the temporal nature of the stigma associated with smoking. For many of the women, seeing pictures of themselves with cigarettes in their mouth brought sighs, frowns, and descriptive comments such as “trashy,” “ugly,” and “I'm not proud of it.” Again, the reference to smoking as “it” carries meaning, being an act that cannot be called by name. The embedded meanings of “it” carried over to expectations of self-respect and respect for others when smoking.

#### *Family support and expectations*

Favorite pictures from participants reflected the value of maintaining close family relationships, often taken during social engagements with family, friends, and activities they describe as “fun,” “nice,” or “relaxing.” For example, “most liked” photos included images of trips to the beach with family members, cookouts with family, social activities with family or friends, enjoying TV shows, and “just chillin” with neighbors or co-workers. Notably, family was the center of personal and social support for these women, which carried benefits and risks. Households were commonly described as mother-daughter, and often included a third generation of children. Other extended family members such as siblings, grandparents, aunts, uncles, and cousins lived within walking

or driving distance and framed the participant's primary resources for social engagement, social systems, and support networks. Close relationships with families were personified through celebrations with family members, caring for each other's physical and emotional needs, assisting with financial aspects of maintaining the family, and daily interactions that reinforced shared socio-cultural values and expectations (Photo 2). Most often, "friends are family members." This close family association crossed generations and geography, which provided the benefit of care and support during physical, emotional, social, and economic challenges.



Unfortunately, close family relationships were also associated with expectations that carried consequences, burdens, which the women felt obligated to fulfill in times they were struggling to endure their own situations. For example, one of the participants with the pseudo name *Journey*, selected a photo as "favorite" that involved an older aunt who had expectations of being cared for by Journey, who is currently struggling with her own failing health and cares for a disabled daughter. Journey mocked her aunt's comments as she looked at the photo, "Yeah. And, like my aunt, she wants me to keep 'er..." "I need somebody here to help me out. I want you to take care of yourself so you can help me out when I get old," (Journey)." In addition, since many of the women had family members who smoked, the social nature of smoking was reinforced by living with other smokers and during family gatherings as smokers gathered "outside" to smoke, away from the non-smokers.

### Being the good mother

Being a good mother was a common theme throughout the women's narratives. The women were anxious about their ability to provide for the daily needs of the children, keep them safe, and secure a meaningful future for them. Most were single mothers or women who were involved with raising grandchildren. They expressed the distress they experienced as they struggled to meet the basic daily needs of the children, which included providing appropriate meals for the children, clothing them adequately, keeping a home that provided for warmth and space, and finding fun activities for their children to enjoy. Keeping their children safe was a daily concern for many of the women who lived in communities that experienced shootings, drugs, and domestic violence. Missy lived in "the projects" in her rural town and did not let her young daughter play outside after her 14-year-old son was shot last year while crossing through the back yard of an angry neighbor. Some women struggled between the need to set limits with their children's behavior and the desire to allow children to find pleasure in daily activities. They described visits to their homes from Child Protective Services and appointments with school officials to discuss their child's misbehavior. In one of Missy's favorite photos labeled "One reason why I smoke," she

was readying her children for Halloween. Her description of the festive photo of children at Halloween provided nested meanings of what it was like to be a good mother living in rural "project" housing who struggled to balance her children's need to be outside, and her desire to keep them safe.

We had went to Wal-Mart and I bought my daughter a pumpkin. And she went and got her friends and carved it up, that was it..... "It's all of the kids and they wreck my nerves"..... "They wreck em'. They're nerve wreckin'. They argue all the time.".... It's cool. I like for them to be in instead of outside anyway, too rough out there.

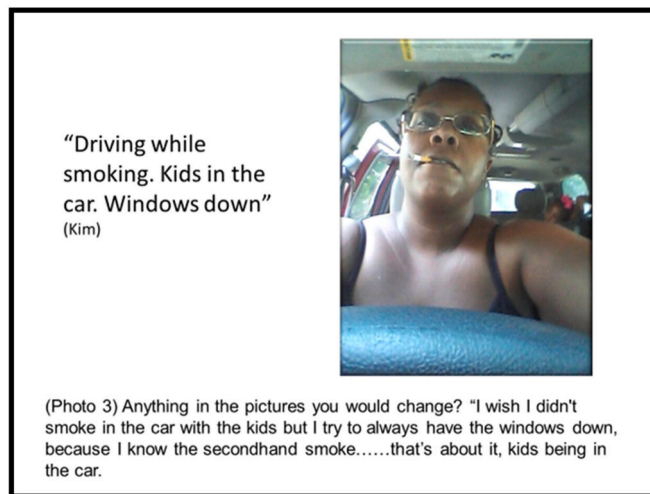
(Missy)

The women worried about their children's future within an environmental context with limited opportunities and resources for personal growth and encouragement. They recognized their own limitations, the limited resources within their communities, the negative consequences this held for the future of their children, and they expressed their discouragement.

Like, I feel sometimes – sometimes, I feel like giving up, but then I look at her and I'm like, I can't give up cause she lookin' at me, she dependin' on me. So I try to— is like I'm holding back a lot of tears and stuff for her, cause I don't want her to feel the pain. I just want her to know everything okay.

(Deasia)

In addition, women realized that continuing to smoke could affect their children's health and influence their children's decision to smoke in the future. Unfortunately, daily stress and the relaxation they experienced from smoking interfered with plans for quitting. One of Kim's favorite photos was driving with her children, taking note that her title was "windows down" (Photo 3).



### Hope for a better life

Embedded throughout the pictures and narratives were visions, expectations, and plans for a better life that would allow them to successfully stop smoking in the future. The struggle to feel empowered and control their lives was disclosed in their conversations of hope. Bug hoped that one day she would not have to worry about her autistic adult son. Myoshi and Journey hoped they would regain their health and be able to enjoy more time with family. While they hoped to find new housing that was safe for their families, Melissa, Missy, Sandra, and Ashley were also struggling with parenting concerns that they hoped to resolve. Sarah had a vision of finishing school and opening a business

that offered opportunities for children in the community to reach goals that would provide for a better life. These were just a few examples of the many underlying hopes, expressed by the women during this study that disclosed an underlying belief in one's ability to produce routes that lead toward achievable goals and a pathway to smoking cessation. That said, many participants have planned, initiated, or were in the process of moving toward their goals.

I'm hoping once I get on my feet, I become stable, I get an apartment, I get my kids, and I have a steady job and a steady income... I'm hoping then I'll be able to quit (smoking), it will fill my void with doing fun things with my kids and like regardless I do fun things with my kids but to fill that void of smoking, play a game or draw picture or color or dance around the house and sing songs.

(Ashley)

## Discussion

Findings from this study provide an inside view of women in need of opportunities to develop social connectedness and social networks that offer opportunity for change outside their personal circumstances. Place, or rural life, has geographically and economically influenced a sense of physical and psychological isolation that reinforces dependence on circumstances and people with whom the women have connections. A lack of diverse communal resources and limited transportation to outside resources impedes the development and sustainability of broader social connectedness, something quite different than having social connections. In addition, the stigma of smoking further precipitates the sense of isolation as it interferes with the women taking advantage of opportunities that may serve to broaden social connectedness.

This study yielded two unexpected findings: the socially isolating nature of smoking within the context of rural low-income women, and the framing of smoking behaviors and smoking cessation around hope for a better life. Researchers and health care providers who are investigating strategies to understand and reduce smoking in populations that have been resistant to current smoking cessation programs are called to consider the contextual findings that are explored in this study. Findings from this study emphasize the interconnection of social isolation related to the stigma of smoking, hope for an improved quality of life and the need to develop targeted interventions aimed at improving the health of rural low-income women who smoke.

The theme of hope for a better life, which conceptualizes the individual's sense of determination and empowerment to successfully move toward a perceived goal, was unexpected. While results from studies on smoking and health behavior support the relationship between social context, smoking, and health behaviors, the conceptualization of hope in smoking studies is new. Hope is a human phenomenon that is positively associated with life satisfaction and a sense of well-being, which play important roles in human existence and feelings of achievement (Coughlin, 2006; Davis, 2005; Wroblewski & Snyder, 2005). Although there are several definitions of hope in the health literature, more recent constructs view hope as a temporal process focused on the future achievement of desired goals that are linked to positive physical, psychological, and social well-being (Morse & Penrod, 1999; Snyder et al., 2000; Tutton et al., 2009). Hope is conceptualized by Snyder et al. (1991) as an emotional and cognitively motivational process that emphasizes the identification of pathways, or resources, to achieve desired goals. More specifically, hope is a cognitive process that requires belief in one's ability to produce routes that lead toward achievable goals (also known as pathways) and the belief that one has the ability to move toward the desired goals (also known as agency). The sense of goal directed determination (agency) and the sense of planning ways to achieve the goal (pathways) are inter-related components that are essential for hope. Marsh and Mackay (1994), in their report on poor smokers in Great Britain, state that disadvantaged smokers that are poor

are so consumed with lack of opportunity, inequality, and poor self-esteem that there is no room for optimism, or hope, which they linked to the desire to quit smoking. In contrast, the results of this study suggest that there is optimism and hope for a better life through a planned, goal directed set of achievements that will lead to eventual smoking cessation. By articulating their hope to stop smoking in a temporal and cognitive manner, participants have initiated a plan, or pathway, toward cessation.

The socially isolating nature of smoking was a second unexpected finding in this study. Although the relationship between social networks and social support in health promoting lifestyle choices of rural women is complex and not well established, every woman completing this study recognized that smoking and tobacco use disorder is stigmatized and had a negative influence on their social position and participation in community activities that offered opportunities for social support (Adams et al., 2000; Mansfield et al., 1988; Pierce, 2012). Participation or involvement in community resources that offered possibilities of social support were limited as the women weighed their individual need to smoke with their fear of rejection if known to be a smoker. Even signs of smoking during encounters with family, church members, or other community residents were perceived by the women to be a reason for stigmatization and rejection by community members.

The stigma of being a smoker, or experiencing tobacco use disorder, has costly layers; beginning with the visual and sensory acts of smoking, which are perceived as unattractive, undesirable, and odorous. Underneath this outer layer is the moral discourse experienced in response to judgmental comments from family and members within their limited social networks. Judgmental comments carry undertones of social control, emphasize the need to act according to socially determined responsibilities toward self and others, and threatening to inflict the consequences of social distancing for those not in compliance (Poland, 2000). Flint and Novotny (1997) have proposed that the social isolation experienced by smokers, whether by self-choice or social distancing, may in fact perpetuate tobacco use disorder. Staying isolated, the smoker is less exposed to social triggers that encourage cessation and has less exposure to resources that may assist with cessation.

Consistent with existing knowledge about tobacco use disorder in disadvantaged populations, the rural low-income women who participated in this study smoke as a means of coping with barriers related to feelings of isolation, limited access to social and economic resources, poverty, and unemployment (Stead et al., 2001). Another significant factor within the context of rural communities is the universal theme and concern surrounding community violence. There is a widespread belief that little crime occurs in rural areas of the U.S., however, studies on the effect of social disorganization are challenging the assumption that rural communities are homogeneously lower in crime (Kaylen & Pridemore, 2011; Lee et al., 2003). Rural women are more often victims of intimate violence when compared to their urban and suburban counterparts due to social normalization of domestic violence and limited social support available in rural areas (Rennison et al., 2013). Observational and textual findings from this study suggest that community and domestic violence is a routine part of life for these participants. Researcher interactions with participants, family members of participants, and community members as well as researcher observations of neighborhoods and participant homes confirmed the participant's apprehensions about safety. These safety concerns influenced the women's smoking behaviors by further increasing feelings of isolation and limiting their social engagement with the community. Opportunities to receive social support and expand social networks were limited as the participants chose to stay at home, or inside, to maintain a sense of safety for themselves and their families. This social network connection to smoking behavior is evident in the findings of this study, as study participants identified family and friends that smoked being significant in their decision to initiate smoking (Table 3).

Nevertheless, the participants in this study were extremely resourceful despite being socially marginalized, economically



disadvantaged, and faced with smoking stigmatization from within their social networks and family support systems. These resourceful women identify and navigate through community and social resources using smoking as an operational tool; its “relaxing,” “calming,” and “allows me to stop and think it through.” They have found islands, or networks, of other smokers in their family and friends that provide a sense of acceptance and social support through the sharing of cigarettes and smoking rituals. In addition, using the ‘breath’ in smoking, as a means of relaxation and stress relief is a noteworthy finding. Participants shared that smoking gave them time to take a break and breathe. These smoking-facilitated moments of focused breathing and relaxation should be further investigated in future research. Strategies and interventions designed to substitute smoking-facilitated breaks and deep breathing with healthy strategies for creating space for self-care and downtime may be successful in women similar to those included in this study. The use of breathwork, including mindfulness-based interventions, in smoking cessation has shown promising results and warrants future study (Brewer et al., 2011; Carim-Todd et al., 2013; Davis et al., 2007; Witkiewitz et al., 2013).

The exploration of meaning in women from low-income and rural settings, revealed potential targets for future study and intervention. The themes identified in this study, including family support and expectations, revealed the enormous stress that women in this study face on a regular basis. They described expectations to prioritize care for others over self-care while feeling obligated to suppress their own emotions. Women also identified motivations to succeed despite limited resources. These concepts, which are consistent with a concept referred to as Superwoman Schema (Woods-Giscombe, 2010; Woods-Giscombe et al., 2019), may be beneficial to explore in future research that aims to better understand and address stress and other contextual influencers of smoking behavior in women from underserved groups. Findings related to poverty, unemployment, and increased environmental stress in disadvantaged populations who smoke are not new and it has been clear for some time that when designing smoking cessation programs “one size does not fit all.” Results of this study suggest that *downstream* factors associated with smoking behavior and choices, such as social engagement, social identity, social support, and social networks, are influenced by *upstream* determinants of health, such as social, political, economic, and historical factors that shape the context of being a low-income rural woman.

### Limitations

Findings from this study cannot be generalized to all women from low-income and rural backgrounds who smoke. The current study was limited to 13 women smokers from three rural areas in a southern mid-Atlantic state. In addition, although not explored in this study, the racial differences in smoking that exist between rural African American women and other racial and ethnic populations of rural women warrants further investigation, more specifically exploring the differences in the age at which smoking is initiated, type of tobacco products preferred, and targeted cessation programs that account for these differences. And, as place matters, future research on smoking in rural low-income women should be expanded to include a variety of rural regions across the U.S. to explore unique cultural, ethnic, and racial factors that influence smoking behaviors across various populations.

### Conclusion

The findings from this study related to social and cultural meanings of smoking in rural low-income women and the relationship these meanings have in their decision to smoke or to attempt smoking cessation have implication for health professional working with disadvantaged populations of smokers who have not expressed a desire to quit or have been unsuccessful with their attempts to quit. Recognizing that smoking in this population is often hidden due to stigmatization is

significant as future cessation programs that target this population are explored (Rolle et al., 2016). Healthcare providers and organizations focused on providing access to health services in disadvantaged areas need to acknowledge and accept that this group of women use smoking as a means of coping with significant life struggles that must be targeted for resolution before smoking cessation is attempted.

The findings of this study also suggest the potential benefit of exploring the use of creative approaches to stress relief and relaxation, such as mind-body interventions that help women from rural and low-income settings to create space for breathing, relaxation, and self-care. Mindfulness interventions have shown promise in other populations for improving substance use disorders, enhancing social connectivity, reducing emotional distress, and improving coping in the context of social stressors (Barr & Kintzle, 2019; Bowen et al., 2017; Morley et al., 2016; Short et al., 2017).

Planning of future interventions should not overlook the impact of social determinants of health on the complex challenges facing rural low-income smokers with tobacco use disorder. Future public health interventions must address the need to create safe environments for low-income rural women and their children. Enhancing safety and empowering the women within their community will provide avenues of social support and support the needs expressed by the women in this study. The perspectives shared by the study participants illustrates the need for policy level interventions aimed at facilitating the allocation and distribution of resources to address basic local needs such as accessible community activity centers, extended day schools, and accessible healthcare facilities (Cacari-Stone et al., 2014; Figueroa et al., 2018). Intentional, interdisciplinary efforts that include researchers, healthcare professionals, policy makers, community advocates, and other stakeholders must continue to draw attention to and resolve the social determinants of smoking in women from low-income, rural backgrounds.

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