Published in final edited form as:

Sociol Spectr. 2019 ; 39(6): 405–423. doi:10.1080/02732173.2019.1704327.

Using photovoice to explore social determinants of obesity in two underserved communities in the southeast

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Abstract

Over the past 25 years, the adult obesity rate in the U.S. has increased 70%, with obesity placing a disproportionate chronic disease burden on African Americans. Using Photovoice methodology, this study aimed to: (1) explore the social determinants contributing to obesity from the perspectives of residents of two low-income municipalities in Birmingham, Alabama with varying levels of segregation, (2) better understand residents' perceptions of contributors to obesity in their communities, and (3) examine residents' perceptions of interventions that might be effective in promoting positive change. Focus groups ($N=10$) segmented by race and community were conducted by trained moderators. Transcriptions were analyzed by theoretical thematic analysis. The study design and data analysis analyses were guided by a conceptual framework based on the Social Determinants of Obesity model. Findings from this study lend support to the efficacy of the conceptual framework as a multilevel approach describing obesity disparities in the south. Regardless of community and race, participants believed that elements of their built environment, such as fast food restaurants and unsafe walking conditions, contributed to obesity, and that schools and churches should play an active role in addressing the issue.

Introduction

Over the past 25 years, the adult obesity rate in the U.S. has increased 70% with an increase of 85% for children, and southern states have realized the largest gains (RWJF 2019). Further, African Americans have higher rates of obesity (Ogden et al. 2014) than their white counterparts and have more difficulty losing weight than whites when participating in the same interventions (Kumanyika 2018). Obesity places a disproportionate chronic disease burden on African Americans, who have higher death rates overall and higher mortality for

many chronic conditions, such as cardiovascular diseases and cancer (Cunningham et al. 2017).

Considering these health disparities, the social determinants of health (SDH) framework is a useful lens through which to study disparities in obesity and ultimately design effective interventions as the framework emphasizes the importance of social, economic, environmental, and cultural factors in driving and sustaining health disparities (Braveman, Egerter, and Williams 2011; Daheia et al. 2018; Mama et al. 2015). Although sociological research has examined the ways in which the SDH model explains health disparities in American society, to more effectively address health disparities, recent research indicates that that more research seeking the perspectives and priorities of African American communities is necessary (Coughlin and Smith 2017).

Considering past research on this topic, this paper has three aims: 1) to explore the social determinants contributing to obesity from the perspectives of individuals living in two low income urban communities in the deep south, 2) to better understand their perceptions of what contributes to obesity in their communities, and 3) to examine interventions that might effectively promote positive change. By addressing the aforementioned aims, this paper hopes to provide a voice to the individuals living in these communities and foment new avenues for policies, programs and further research on the social determinants of health.

Review of literature

Since the acknowledgement that disparities in race, income, and education negatively affect health outcomes (Link and Phelan 1995; Whitehead and Dahlgren 1991) and the introduction of the World Health Organization's SDH model in 2007 (CSDH 2007), medical and social researchers have routinely collected social variables such as socioeconomic status, race, sex, age, and marital status. However, often neglected are complex social factors such as those related to social support systems and neighborhood environmental conditions. These factors provide valuable information about resources available to individuals and insight into possible adherence issues with recommended medical and behavioral interventions (Chen et al. 2018; Daheia et al. 2018; Dilley et al. 2018; Phelan and Link 2015).

Although the proximal determinants of obesity—diet and physical activity—are well known, distal place-based factors such as neighborhood living conditions, urban decay, and social cohesion play a role in how obesity is distributed in a population (Irma et al. 2015; Juonala et al. 2019; Pool et al. 2018). Likewise, it is difficult to study disparities in obesity rates without consideration of systemic racism as an underlying mechanism driving the racial segregation evident in many low-income communities (Phelan and Link 2015; Pool et al. 2018; Thibodeaux 2016). The social determinants of health are therefore a useful lens through which to study obesity.

Maintaining a diet rich in fruits and vegetables is important in maintaining a healthy weight (U.S. Department of Health and Human Services 2017) and individuals residing in poor neighborhoods are more likely to become obese than those living in non-poor neighborhoods

(Centers for Disease Control and Prevention 2017), potentially due to reduced opportunities for making healthy dietary decisions (Lippert 2016). Living in a community that has nearby grocery stores that carry fresh fruits and vegetables can be problematic in low-income communities (Christiansen et al. 2013; Luan, Minaker, and Law 2016; Thibodeaux 2016) and fast food restaurants are often the only options for dining out (Carroll-Scott et al. 2013; Colón-Ramos et al. 2018; Lippert 2016).

In addition, physical characteristics of neighborhoods influence levels of physical activity. Walkability is an important feature in encouraging community residents to be physically active, predictably growing more crucial as one ages (Carlson et al. 2012; Loptson et al. 2012; Van Cauwenberg et al. 2016; Xu 2018). While some impoverished communities lack green spaces entirely, those with parks find them frequently untended with playground equipment in poor condition (Falbe et al. 2015; Knapp et al. 2018; Mama et al. 2015). Physical activity and dietary patterns are also associated with the social cohesion, civic engagement, and collective efficacy in the places where people live. Neighborhoods with high levels of social cohesion have lower obesity rates (Browning and Cagney 2002; Cohen et al. 2006), and social cohesion and social support help buffer against negative factors, such as crime and neighborhood disadvantage (Singh et al. 2008; Singh, Siahpush, and Kogan 2010).

Finally, high levels of social cohesion and social support play important roles in increased levels of physical activity (Daheia et al. 2018). Neighborhoods reporting high levels of social cohesion have lower obesity rates (Dulin-Keita et al. 2013; Henderson et al. 2016) and there is evidence that the amount of social support one feels can buffer against negative effects stemming from crime and neighborhood disorder (Daheia et al. 2018; Garthwaite and Bambra 2018; Guilcher et al. 2017).

Besides examining the social determinants of health, to more effectively address racial/ethnic health disparities, many of which are related to obesity, more studies utilizing community-based participatory research (CBPR) in African American communities are necessary (Coughlin and Smith 2017). CBPR, with its emphasis on equitably involving diverse partners in all phases of research, capacity building, and empowerment and balancing research and action, has become the predominant paradigm for examining and addressing health disparities experienced in underserved racial/ethnic minority communities (Israel et al. 2010). CBPR focuses on locally defined priorities and locale-specific health determinants to design more effective interventions that may be more acceptable in the communities where they are implemented. By inviting residents to be a part of the research process, community members benefit by their voices being heard and investigators are more equipped to interpret data in the local context (O'Brien and Whitaker 2011). Research that ignores the perspectives of the community may result in strategies that fail to address local needs and resources that would enable interventions to be successful (Israel et al. 2010; Minkler 2005; Wallerstein and Duran 2006). Research that utilizes CBPR can also more effectively address health policy at multiple levels (O'Brien and Whitaker 2011). Therefore, this research utilizes a CBPR approach, photovoice, to examine community insight into the causes of obesity and potential solutions.

Methods

Photovoice is a methodology that uses photographs as a way for participants to tell a story. This powerful tool engages participants in the data-collection process and allows insight into the everyday lives of individuals who may have never had an opportunity to visually demonstrate activities common to their life experiences (Wang and Burris 1997). Data collection from photographs and focus groups occurred in October and November, 2010.

Theoretical framework

The study design and data analyses were guided by a conceptual framework (Figure 1) based on the Social Determinants of Obesity (SDO) model (Anderson et al. 1999; Bennett, Wolin and Duncan 2008). Anderson's sociocultural-environmental model (1999) was adapted from the social determinants of obesity framework of Bennett et al. (2008) and the insight of our research team.

Study population—The study took place in two municipalities in the Metropolitan Statistical Area (MSA) of Birmingham, Alabama, a U.S. city with a population of 208,880 (United States Census Bureau 2018) with 66% of adults overweight or obese (Centers for Disease Control and Prevention 2013). The two communities were chosen because they had similar population sizes with comparable educational attainment, but varied with respect to race and income. Race of Community A was approximately evenly split 50% black, and 46% white with average annual income just over \$43,000, while Community B was predominantly black (90%) with an average annual income of just under \$28,000 (Table 1).

Participant recruitment—Flyers describing the study were disseminated throughout both communities in frequently visited venues. Potential participants completed telephone screenings to determine the following eligibility criteria: 21 years of age, willing to attend three in-person meetings (orientation, return of disposable camera/journal, and focus group), and comfortable using a disposable camera. Participants were provided a \$50 gift card as an incentive. Written informed consent was obtained from all participants during the orientation meeting, and the study was approved by the Institutional Review Board at the University of Alabama at Birmingham.

Study design—The study included three face-to-face meetings (Table 2). At the orientation meeting, participants completed a demographic questionnaire and self-reported weight and height. They were given study materials, including a disposable camera and a journal, and were asked to take 3–4 pictures per day for 7 days of “things about the places where they lived, worked, and played that influenced the weight of people in their community.” They were also asked to write in the journal their thoughts on why they took a particular picture. To avoid confidentiality issues, participants were specifically instructed not to take photos of other people. Participants were asked to return cameras and journals to designated drop-off sites, where they were given a date and time for a focus group meeting to discuss their photographs.

Focus groups were segmented by community and race and were conducted by race-concordant moderators, who had been extensively trained to conduct qualitative research in

the Recruitment and Retention Shared Facility at the University of Alabama at Birmingham. Each participant selected three of their own photographs for group discussion. The moderator prompted participants to respond to six questions for each picture based on the SHOWED methodology: 1) What do you See here? 2) What is really Happening here? 3) How does this influence Our weight? 4) Why does this problem, condition, or strength exist? 5) What can we do to Educate others about the problem, condition or strength? 6) What can we Do about it? (Hergenrather et al. 2009)

Data analysis—Focus group sessions were audio recorded and transcribed. Because the study aimed to examine participants' insights about the social determinants of obesity in their communities, and whether or not their responses fit into the SDO model, the transcriptions were analyzed by theoretical thematic analysis (Braun and Clarke 2006) based on the SDO model (Figure 1) (Bennett et al. 2008). Theoretical thematic analysis, in contrast to inductive approaches, is driven by the investigator's research questions and/or theoretical framework, which tends to provide a more detailed account of a specific element of the data (Braun and Clarke 2006).

We considered elements of the model to be themes and these were converted to codes. In order to protect against forcing the data to fit into the pre-determined coding structure, two experienced qualitative investigators coded the data independently and then met weekly throughout the process to compare codes and make joint final coding decisions. If a theme arose that did not fit into the code list, a new code was created. Themes were considered relevant if they were mentioned by focus groups from both communities and by black and white residents. Some themes were discussed by most focus groups in only one of the communities or among focus groups of only one racial group, and these were noted as well as being relevant. Both coders, one a postdoctoral fellow and one a research associate, had terminal degrees in sociology, were trained at the doctoral level in qualitative research, and have published academic work using qualitative methodology.

Results

Ten focus groups were conducted across the two communities: six groups in Community A (3 black and 3 white), and four groups in Community B (3 black and 1 white). Group size ranged from 5 to 7 persons (mean = 6, total $N=59$). The average age of the participants was 53 ± 15.6 (range 21–90); 73% ($n=43$) of the participants were women (Table 3). Focus groups lasted approximately 90 min each.

Participants discussed a total of 96 photographs related to factors that influence obesity in their communities. Results are presented by themes organized into three areas – root, underlying, and proximal – based on the SDO model (Figure 1). The root and underlying determinants describe context-level factors, while the proximal determinants refer to individual-level factors.

Root determinants of obesity

Photographs did not explicitly capture root determinants that impact a community's obesity rates. However, discussions surrounding racial segregation and unmet market needs

(underlying determinants) alluded to root causes such as equity, social justice, and societal resources. Black residents, particularly from community B, suggested that racism might play a role in their declining neighborhoods and that the reason some grocery store chains are absent in their area was because of discrimination: "...they think with black people they are not going to build to make money-..." Others agreed that certain stores would not come to their community due to racial discrimination.

Only one focus group voiced overtly discriminatory views; however, because this was the sole white focus group from Community B (90% African American), we mention it here. Two participants noted that the recreation center was "all black" and this kept one of them from exercising there. "We became members this year for the first time, but the main reason we didn't go is it's ... all black." The other one, however, noted, "I am the only white person there. They're all black... but I went and made some really good friends and I love it. I try to get there at least three days a week."

Photos also led to discussions of how public policy influences obesity rates. Concerns about policies were voiced primarily in black focus groups. Community B groups expressed a concern that leash laws were not being observed, which infringed on safety and affected the ability to be physically active outdoors. Black residents of Community A were concerned that their community did not have appropriate zoning laws, which made it possible for "lower-end" businesses (e.g., pawn shops) to come in with few restrictions.

Underlying determinants of obesity

According to the study's conceptual framework, root determinants ultimately influence the underlying determinants of obesity. Neighborhood living conditions was the most widely discussed theme with regard to underlying determinants.

Community (economic) development and employment opportunities—The theme of community (economic) development and employment opportunities was discussed by all focus groups as the reason for the neighborhood living conditions. Black and white residents of both communities took several photos of decaying neighborhoods and talked about how their communities were moving backward in terms of development, from places where once there was solid employment, plentiful shopping, restaurants, and churches, and a "fine school system." Much discussion centered around Walmart and the "monopoly" it held because all competitors had been driven out. One black resident of Community A summed up the demise of her community, "I will use the word sadness because you invest in property, a home out here to raise your children because of how [Community A] used to look, when the traffic wasn't bad, when all those fast food places weren't up and down. I remember when... what we would have called a quality store... was there if you needed something ... " Black and white residents of Community B also voiced discontent that department stores, grocery stores, sit-down restaurants, and even whole malls had closed due to large employers leaving the community. One white resident stated that replacing the employed people were "mostly renters or Section 8, and they don't care." Participants also claimed that "all family-oriented things are gone." One pointed out that there simply was "not a lot of resources, not a lot of money" in Community B.

Neighborhood living conditions—Photos elicited responses related to neighborhood living conditions. The prevalence of trash, dilapidated houses, and dying trees with downed limbs, overgrown properties, and vacant storefronts were external signs of neighborhood decline. One resident of Community B noted that there are “abandoned houses on every street.” Others noted that people who have the means to move to areas with more resources have done so, but selling homes was difficult in the current climate. One white participant of Community B showed a photo of an abandoned house (Figure 2) and explained that it “represents a cycle of poverty,” which leads to a “depressing... overall feeling sometimes you can get in [Community B].” This depression can lead to overeating, she stated.

A black participant from Community B, who took a picture of her neighborhood in the morning, suggested that as the day went on, “unsavory people” gathered within sight from her window to drink alcohol, smoke, and sell drugs. She said this affected her weight because “you’re not active and you don’t want to go outside because you’re scared you might get caught in the crossfire.” So, she stays in the house and watches TV and eats. Community A residents took photos of abandoned stores and the main highway going through town, filled with title loan stores and fast food restaurants (Figure 3).

Nutritional environment: While the built environment was suffering, the fast food industry was thriving in both communities. In fact, almost one-quarter of the discussed photos were related to fast food. Black and white participants from both communities lamented their lack of options when it came to restaurants, and linked the lack of healthy choices to the obesity rate in their communities. Starting with the high-fat, high-calorie, oversized portions of foods that contributed to obesity, discussions often turned to fast food convenience and low cost. Similarly, several blacks and whites in both communities shared photos of convenience stores with cheap, unhealthy food. Other photos featured restaurants that were not considered fast food, such as those serving barbeque, “meat and three,” Chinese, and Mexican. Some of these were said to have healthier choices than fast food, although they carried unhealthy choices as well.

Photos of grocery stores were related mostly to Walmart. Although participants admitted that Walmart offered both unhealthy and healthy choices, the consensus was that the strategic placement and display of foods contributed to unhealthy purchases. Much of the discussion centered on resentment toward Walmart over the feeling that it has caused other businesses to close down. One Community A participant noted, “Walmart has killed this neighborhood.” Participants correlated the rise of obesity in Community B with the coming of Walmart. Community B participants discussed that their Walmart did not have the variety nor the quality of fresh foods that Walmarts in neighboring communities had. A minority of participants noted some positive aspects about Walmart: the convenience it provided and the variety of items in the produce section.

Recreational environment: Residents also photographed features of the built environment that can decrease obesity by offering opportunities for physical activity. Participants from Community B shared photos of their community center, which included exercise facilities. Participants noted that the community center was helpful in reducing obesity because it gets “people out of their homes.” As mentioned earlier, comments in the sole white focus group

in Community B noted that the recreation center was “all black.” Although this kept one participant from going, another commented that she goes more frequently now and has made friends there.

In Community A there is no community center, but participants took photos of a commercial fitness center. Participants from both communities spoke of informal recreational areas where people walk, such as parking lots of area businesses, although they noted safety issues such as insufficient lighting. Black residents from Community B noted more opportunities for physical activity, but felt there was a lack of awareness of these. They expressed appreciation for the community center, which included an indoor track and offered exercise classes, and for parks that had some sidewalks in good condition. They also named churches that offered physical activity classes for seniors. However, they mentioned the need for more security. Residents of both cities felt that the overall lack of sidewalks, insufficient lighting, and safety issues impeded walking for physical activity.

Physical safety: Participants shared that concerns about physical safety decreased the likelihood of exercising in their neighborhood. Residents from most of the focus groups from Community B (but only one focus group of Community A) discussed incidences of crime in their neighborhoods that kept them from being active outside, not only in the evening but also during the day. A white resident of Community A noted, “That’s one of the reasons I don’t walk during the day with all that’s happened out here. I’ve never been like that in my life because I’m not afraid of anything, but I don’t want to have to walk with a gun.” More than twice as many comments about physical safety were made by white participants than black participants, but the sentiment was similar. The perceived threat of crime and social disorder resulted in lower rates of physical activity in their communities, but also led participants to be innovative and seek new ways to exercise, such as walking around well-lit local businesses.

Social cohesion, civic engagement, and collective efficacy

Fear of crime not only contributed to a lack of physical activity among residents, it also affected social cohesion as people feared leaving their houses even to interact with their neighbors. Black and white residents discussed the decline of social cohesion in their neighborhoods. Participants noted that working long hours at more than one job did not leave time for people to be involved civically, therefore they lacked concern for the community in which they lived. “We need a whole lot more people that care,” stated a black resident of Community A. A white resident of that community suggested that “the neighborhood has changed drastically” from when she moved there in 1980, when kids in the neighborhood used to play together and went to the same school. Others pointed out that at one time there were civic groups that socialized, and now there were none. The community center in Community B (Figure 4) was seen to increase social cohesion, as it brought residents together and served an important role, especially for those feeling stressed due to economic hard times, “...not only are you working out, you’re also fellowshiping with other people, so that not only makes you feel good; it also improves quality of life, so it gives you that extra oomph to keep going.” Shared meals can bring cohesion among extended family, but participants stated that these are unhealthy and can lead to overeating.

Opportunities for learning and developing capacity

Opportunities for learning about health and nutrition were described by black and white residents as lacking in both communities, although participants wished they had them. Participants brought up the importance of education for decreasing obesity, especially in learning how to cook healthy meals. As will be noted in a later section, cooking seemed to be a lost art in these communities, contributing to obesity. “We need to educate our people in the younger generation what is good for you.” Regardless of race, residents in both communities felt that more needed to be done in the schools to teach healthy eating and physical activity; however, they also noted that education was not enough. For example, a white resident of Community A suggested, “They teach them the pyramid, but then when they get home the pyramid is not there.” Learning in school had to be supported at home, and this often was not the case.

Proximal determinants of obesity

Based on the study’s conceptual framework, contextual issues such as neighborhood living conditions influence individual diet and physical activity patterns. In this study, photos of the built environment paved the way for conversations about how contextual determinants affect proximal determinants and contribute to (or protect against) obesity at the individual level.

Convenience, cost, and time

The variables of cost, convenience, and time converged in discussions of obesity rates and represented more comments than any individual-level variable except health behaviors. Photos of fast food restaurants in particular elicited discussion of how time-crunched people with limited resources sought convenience in their food choices. Many admitted to not having time to sit down and eat meals with their families. Both single people with no children and parents talked about how they were too busy to cook, and thus fast food and convenience stores offered attractive options.

One black resident from Community A noted, “Am I going to come home from work and make a meal for my kids like my parents did with me, when I’ve got to be at work 12 or 13 hours, or would it be more convenient for me to go to one of these little spots like KFC and get a bucket of chicken for \$15?... There’s not enough time in the day to do your job, take care of the kids and feed them a good meal.” Likewise, a white resident of Community A noted that she can drive through a pizza restaurant and pick up \$5 pizzas and “... you close up those boxes and they’re gone. It’s not like I have to spend 20 min in there cleaning up the kitchen...”

The fact that healthy food is more expensive was repeatedly brought up. One white participant from Community A explained that, “I could easily buy a pack of hamburger and macaroni-and-cheese, or something, and fix a meal for just four or five dollars. If you try to... get a salad, and stuff to put on it, and dressing, then it gets to be a little expensive... and it’s very hard.” Another white resident from the same community lamented, “... you’re supposed to eat, what, six fruits a day, I think? You can’t afford to do that.” They also suggested that the large portion sizes at a cheap cost lead to overconsumption. “It plays

havoc with us. I'm sure it's not just blacks; it's whites also," suggested a black resident of Community A.

Although the main discussion surrounding time had to do with people being very busy and having no time to prepare healthy meals, in contrast were a few participants who were at home for long periods and ate out of boredom, such as a black resident from Community A, who stated, "... if I had something else to do I probably wouldn't be sitting at home eating. Just too much time, nowhere else to go, nothing to do."

People's busy lives also contributed to a lack of exercise. According to a white resident of Community A, "A lot of people are working; it's not convenient to get a group to go walk." The cost of physical activity was also discussed, but mainly in the context of the free and low-cost facilities available at the Community B community center and park, and the low-cost activities for seniors in Community A. Community A also had a fitness center that several participants described; however, it was suggested that the fee may be prohibitive.

Lack of cooking skills

Black and white participants from both communities lamented that people today are not only too busy to cook, but they do not have the skills to prepare meals at home. A white resident of Community A stated, "... our people today, our kids, don't know how to cook. They never took time to learn or they took it in school and that was it. They were always in too big a hurry and... were always going to the fast food restaurants." In order to impact the problem of obesity, one black resident of Community B stated, "We have to learn something that our parents and grandparents did, which was to prepare their own food." Focus groups also addressed benefits of eating meals at home that went beyond nutrition. One black participant from Community A claimed, "You learn things from your kids at the dinner table. If they are always just grabbing a hamburger you never know what's going on in their minds."

Cultural norms and expectations

Much discussion surrounded norms and expectations of the culture, and how they affected individual obesity, such as the idea of "Southern hospitality" that beckons people to serve food when others visit, "soul food" being "part of our heritage," and family members coming over and eating while enjoying time together. Serving unhealthy but tasty food to guests was an "American way." Dissonance between healthy eating and cultural expectations was also mentioned, "...food brings people together and it's just like comfort, a black resident of Community B pointed out, "but at the same time, we're hurting ourselves with all this food." Likewise, another black participant from the same community explained they knew certain foods weren't good for them, but "it's just a way of showing love."

Psychosocial characteristics

Focus groups also discussed the connection between stress or other negative emotions and overeating, and the use of food as "comfort" when people are stressed, bored, or anxious. Participants described how their context induced negative states such as depression, which in turn lead to overeating and obesity. One participant described how "sadness" is linked to the neighborhood living conditions. Another white resident noted, "Here again it's depressing

because... all we have in [Community A] is title loans, cars and fast food, nothing constructive in our neighborhood.” Likewise, a white resident of Community B suggested, “Seeing buildings like this around community could just be depressing. I think depression, obviously, directly affects weight.”

Many comments described how the taste and smell of food, both cooked at home and from restaurants and stores, can lead to obesity. One white resident of Community A took a photo of a Mountain Dew can, claiming it was her “addiction.” One resident suggested, “It’s intoxicating; it’s like a drug ...Instead of using crack cocaine you’re going to use this fried chicken to make you feel good.”

Health behaviors

Participants discussed how psychosocial issues directly affected health behaviors, which were noted as significant contributors to obesity. Several photos illustrated positive food choices. For example, one white resident of Community A took a picture of a bottle of water and explained how he had not had soft drinks for 30 years in order to be healthy. Others of both races and communities took pictures of unhealthy foods and explained that their food choices contributed to weight gain. Behaviors such as watching TV while eating or having a refrigerator in the bedroom were also mentioned as affecting weight. Some participants talked about trying to practice healthier behaviors, such as cutting back on junk food, eating fruit, making healthier choices at fast food restaurants, and cooking at home instead of eating out.

Black and white participants of both communities engaged in much discussion of the importance of physical activity as a health behavior and the lack of physical activity as a contributor to obesity. Video games, cell phones, computers, and televisions were blamed for the lack of physical activity. The neighborhood context was also said to influence the individual choice to exercise: “By me staying in the house all the time, not wanting to come out and deal with the stuff that’s going on in the neighborhood, I sit in the house and watch TV. That’s what I am constantly doing.”

White participants from both communities suggested that the behavior of using food as a reward, as parents rewarding children for good grades, may lead to obesity. They implied that food as a reward may be a more significant contributor to obesity for those who live in poverty. One white resident from Community B noted, “for ... people who don’t have a lot of money and other ways to treat themselves, this is a way to say I deserve it. I’m a good person.” Another white resident of the same community stated, “They can’t afford textbooks or college, but I can afford to give my kid \$2 a day to go to the store and buy junk food.”

Inner locus of control

Black and white residents of both communities discussed the significance of having self-control in order to prevent obesity, and much responsibility was placed on the individual to make the appropriate healthy choices. For example, black residents from Community B suggested, “You have the choice of eating nutritious or you have a choice of eating unhealthy,” and “It’s all up to the individual.” The importance of “control,” “will power,”

and “moderation” was stressed. The individual was given power in being able to “retrain the way we think” to change habits and live a healthier lifestyle.

Co-morbidities and health considerations

Being diagnosed with a chronic disease, such as diabetes or heart disease, or the fear of being diagnosed, caused black and white participants to change their habits to more healthy. One white resident of Community A noted, “When I went to the doctor and she told me I had to lose at least 60 pounds or I was going to die, that makes a difference. I came home and I educated my husband. He agreed we need to eat better, healthier food and that’s what I’m doing.” Another Black resident of Community B suggested that learning about “...how harmful it is to you in the long run, it doesn’t taste so good no more.” However, overcoming the temptation of taste was difficult for people, as a black resident of Community A suggested: “People buy taste, they don’t buy health.”

Proposed solutions—According to participants from both communities, creating awareness – informing adults and children about ways to reduce obesity – through schools and churches was an important first step. Although Community B had a community center with fitness opportunities, participants felt that it was not well publicized among residents. Further, participants, primarily in Community B, stated that businesses in the community had a responsibility to create awareness about healthy choices and to provide healthy options at their stores. If a food store or a restaurant did not meet this responsibility, it was up to community members to reach out and urge management to use informational signs and labels and to offer healthier options.

Although both neighborhoods discussed the importance of community engagement, Community B, and particularly black participants, discussed it to a greater extent than Community A. Focus group members suggested that powerful interest groups, including the school board and politicians, need to work together to address the problem of obesity. Some Community B residents suggested using confrontational strategies, such as picketing restaurants and grocery stores or boycotting businesses that provide few healthy options. Although some were enthusiastic about community engagement, many participants were unaware of community meeting locations and times, or that this kind of civic engagement was happening in their community.

Discussion and conclusion

In order to give a voice to the individuals living in the communities under study and encourage new paths for policies, programs and additional research on the social determinants of health, this paper aimed to do the following: explore the social determinants contributing to obesity from the perspectives of individuals living in two low income urban communities in the deep south, better understand their perceptions of what contributes to obesity in their communities, and examine interventions that might be effective in promoting positive change. Findings from this study lend support to the efficacy of the conceptual framework, the Social Determinants of Obesity, as a multilevel approach describing obesity disparities in the south.

Regardless of race or community, participants had similar perspectives on possible contributors to and solutions for obesity in their neighborhoods. Although we expected to find differences based on racial composition of focus groups and the communities they represented, we found mostly similarities in the discussions. Notably, almost twice as many comments about crime and safety emerged from white focus groups, suggesting that safety was a bigger concern for white residents in both communities. Further, one participant from the sole white focus group from Community B suggested that the community center being “all black” was a deterrent for attending, exhibiting racial prejudice. We mention this comment, even though it was made in isolation, because it may reflect feelings of others in the focus group, but due to group dynamics such as the Hawthorne effect (Oswald, Sherratt, and Smith 2014), they did not voice their opinions which they suspected would be viewed negatively by the group. This comment illustrates how the root causes (racial discrimination) and underlying determinants (residential segregation) converge and affect individual-level physical activity. In other words, this white participant’s health could potentially be hurt by not participating in physical activity at the community recreation center because of discriminatory attitudes.

The findings of this study suggest that root determinants may need to be addressed for obesity to be substantially reduced in low-income communities. Black and white residents of both communities discussed the demise of their neighborhoods, and how cities around them have “shot up” while theirs’ have been left behind. Unfortunately, this reflects a trend in American society, whereby the 21st century consumer-driven, technology-based economy has left behind hundreds of communities due to loss of unskilled labor and reduced community resources and revenues (Osberg 2015). The two communities in the study have experienced substantial disinvestment from some businesses, while others – unhealthy fast food chains, pawn shops, and title loan venues – have moved in.

Individual-level, proximal determinants of obesity were discussed, but participants did not place blame squarely on the individual, nor did they shun personal responsibility. Most importantly, they believed that schools and churches in the community needed to become more active in creating awareness of healthy eating habits and physical activity. Black focus groups discussed community engagement as a solution to a greater extent than did white focus groups.

The concept of the Default American Lifestyle, proposed by Mirowsky and Ross (2015) sheds light on the connection between root, underlying, and proximal determinants of health. The Default American lifestyle has three elements centered around displacement: displacing human energy with mechanical energy, displacing household food production with a reliance on industrial food production, and displacing health maintenance with medical dependency (Mirowsky and Ross 2015). Mirowsky and Ross note that those with more resources have the ability to overcome the Default American Lifestyle, or at least to mitigate its effects.

Participants echoed components of the Default American Lifestyle concept in discussing how contextual issues in their communities negatively influenced their individual health behaviors, most notably the reliance on industrial food production. Although, concepts of both structure and agency were present in the focus group participant responses and personal

responsibility was seen as an important factor, the social context in which individuals live could not be ignored (Boardman et al. 2005; LaVeist et al. 2011). They described the uphill battle they fought to overcome their lack of physical activity and intake of high-fat, high-sugar foods. They noted that their limited resources in the form of time and money played a role in the high incidence of obesity in their communities as they were constantly being bombarded with unhealthy food options. Eating fast food was a consequence of their not having the time to prepare a meal or lack of cooking skills. Further, the lack of physical activity opportunities coupled with safety concerns led to their reported inadequate physical activity. Thus, economic and social forces have put community residents at a great disadvantage by reducing the number of protective factors that help curb the effects of the Default American Lifestyle, while simultaneously exposing them to harmful underlying determinants of obesity.

Study findings suggest that interventions addressing the built environment and the neighborhood nutritional and physical activity environment – restaurants, grocery stores, and facilities for safe indoor and outdoor exercise – align with community needs and priorities and may have a high likelihood of success. Additionally, health promotion programs that increase food-related knowledge and skills and lead to sustained behavioral changes are likely to receive strong community support. Considering data from participants in this study, we offer recommendations at the proximal and intermediate levels of intervention that may be beneficial for reducing health disparities and obesity rates in these communities.

Offering cooking and nutrition based classes could be vital to reducing obesity in these communities. As one participant noted above, “we need to educate our people in the younger generation what is good for you.” Most importantly, policies aimed at aggressively changing the nutritional environment may be effective at reducing the obesity rate in these areas. As the participant mentioned above, the importance of starting young in the education system is vital to the health of these communities. Thus, by providing nutritious meals in the public school system and creating a habit of eating healthy, future generations may see reductions in obesity, even despite the pernicious influence of unhealthy, yet convenient options.

In addition to changing the nutritional environment in the schools, changing the nutritional environment in the communities themselves is paramount. Implementing taxes on sugary sweetened beverages may reduce the intake of high caloric and high sugar products. Although this has been successful in some parts of the country (Falbe et al. 2016), massive political barriers stand in the way of making these changes at the local level. It is hard to imagine this part of deep-red Alabama supporting such initiatives; however, social change over decades and success stories in other parts of the world/country could facilitate the necessary political environment to make these changes feasible.

Participants’ responses suggest that external funding is needed to help educate members, provide resources, and attract economic investment in their communities. They also noted the importance of civic and community engagement for countering the underlying determinants of obesity. As a complex problem, obesity requires coordinated, multilevel solutions (Braveman et al. 2011; Robert and Reither 2004; Smedley 2006; Woolf and Braveman 2011).

Study limitations include the fact that some concepts, such as equity and social justice and psychological issues, such as anxiety and stress, are difficult to capture in photographs. Another limitation is the fact that in Community B, only one white focus group was conducted, which may have skewed the comparison between focus groups and communities. For example, this was the only group that expressed discriminatory views. Further, potential limitations inherent in focus group research include moderator bias, discussions being dominated by one or two individuals, and the tendency toward normative discourses (Smithson 2000). However, by using moderators with extensive training who were racially concordant with racially segmented focus groups, we tried to address these limitations while allowing participants to be more open and honest. Finally, using theoretical thematic analysis instead of inductive methods, while necessary for the objectives of this study, limited the depth of the analysis and opened up the risk of forcing data into pre-conceived themes. An analysis of these data utilizing inductive methods can be found in Oates et al. (2018).

This study is important because it explored social determinants contributing to obesity, as well as potential solutions to the obesity crisis, as understood through the perspectives of residents of two disadvantaged urban communities in the Deep South. This information can be used by researchers and community organizations to design multi-level interventions aimed at decreasing obesity, which can then be taken back to the community for feedback before implementation. Community engaged research is now seen as being crucial to improving the health of disadvantaged communities, (Lloyd Michener et al. 2012) and this study provides a model through which residents may have a voice in addressing health concerns in their own communities.

Acknowledgments

Funding

This study was supported by a grant from the National Institute on Minority Health and Health Disparities [5RC-2MD004778-02].

Biography

Lori Brand Bateman is currently an Instructor in the Division of Preventive Medicine, UAB School of Medicine. She is also an Associate Scientist in the UAB Minority Health and Health Disparities Research Center and a Scholar in the Sparkman Center for Global Health in the UAB Ryals School of Public Health. Her research examines health and illness in the context of social structure, and she has explored the ways in which narrative informs the perspectives of both patients and providers and how this influences provider-patient communication. Her most current work is examining the impact of the social determinants of health on racial/ethnic health disparities

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Figure 1.
Conceptual framework of the study.

Figure 2.
Abandoned home.

Figure 3.
Fast food restaurant.

Figure 4.
Local community recreation center.

Table 1.

Demographics of communities under study.

Community	Population	Median household income	Median age	Black	White	Completed high school
A	10,509	\$43,111	41	50%	46%	84%
B	12,381	\$27,845	37	90%	9%	77%

Table 2.

Summary of face to face meetings.

Face to face contacts	Participant activities
Initial orientation meeting	<ul style="list-style-type: none"> • Provided written consent • Completed demographic questionnaire • Received disposable camera with instructions
Camera drop-off	<ul style="list-style-type: none"> • Returned camera and journal • Received date and time for focus group meeting
Focus Group	<ul style="list-style-type: none"> • Received photographs they took with camera • Chose 3 for group discussion • Participated in group discussion with other participants about photos using SHOWED prompts

Table 3.Demographic characteristics of focus group participants, by race ($N=59$).

Demographic characteristics, %	Community A		Community B	
	Black $N=17$	White $N=18$	Black $N=17$	White $N=7$
Female	70.6	66.7	76.5	71.4
Age, mean (SD)	48.8 (11.7)	53.3 (18.3)	55.2 (11.3)	56.9 (24.5)
Marital status				
Single	23.5	16.7	23.5	28.6
Married	41.2	55.6	47.1	28.6
Separated/Divorced	35.3	22.2	23.5	14.2
Widowed	0	5.6	5.9	28.6
Education				
< High school	0	11.1	5.9	14.3
High school	47.1	83.3	41.1	57.1
College	47.1	0	47	28.6
Graduate/Professional	5.9	5.6	23.5	0
BMI (%)				
Normal weight	6.0	28.6	23.5	16.7
Overweight	29.0	42.8	17.6	16.7
Obese	65.0	28.6	58.9	66.6