Authors

ABRAHAM A. SALINAS-MIRANDA
University of South Florida

LINDSEY M. KING
University of Florida

HAMISU M. SALIHU
Baylor College of Medicine

RONEÉ E. WILSON
University of South Florida

SUSAN NASH
Baylor College of Medicine

SARAH L. COLLINS
University of Florida

ESTRELLITA "LO" BERRY
REACHUP Inc.

DEBORAH AUSTIN
REACHUP Inc.

KENNETH SCARBOROUGH
REACHUP Inc.

EVANGELINE BEST
REACHUP Community
Advisory Board

LILLIAN COX
REACHUP Community
Advisory Board

GEORGETTE KING
REACHUP Community
Advisory Board

CARRIE HEPBURN
REACHUP Community
Advisory Board

CONCHITA BURPEE
REACHUP Community
Advisory Board

RICHARD BRISCOE
REACHUP Community
Advisory Board

JULIE BALDWIN
Northern Arizona University

Protective Factors Using the Life Course Perspective in Maternal and Child Health

A Community-Based Participatory Research Approach

Abraham A. Salinas-Miranda, Lindsey M. King, Hamisu M. Salihu, Roneé E. Wilson, Susan Nash, Sarah L. Collins, Estrellita "Lo" Berry, Deborah Austin, Kenneth Scarborough, Evangeline Best, Lillian Cox, Georgette King, Carrie Hepburn, Conchita Burpee, Richard Briscoe, Julie Baldwin

ABSTRACT

The life course perspective (LCP), a valuable theoretical framework for investigating racial disparities in birth outcomes, examines the cumulative exposure of risk and protective factors throughout the life span. Although risk and protective exposures are equally vital to health, most studies have focused solely on the risk factor exposures faced by vulnerable populations. In clear contrast to the traditional public health approach, which emphasizes a deficit model, strengths-based approaches focus on protective factors and fostering resilience. These approaches view communities as valuable assets that have the capacity to fully engage themselves and their residents to achieve optimal health. Participatory action research methods are well suited to apply a strengths-based approach to understand health disparities. Our study aimed to explore maternal and child health protective factors from community residents' perspective. A group of researchers, including active members in the community with a long history of grassroots development work, conducted ten community-based participatory focus groups with community residents in Tampa, FL, using the LCP framework. A total of 78 residents participated in ten focus groups. Perceived protective factors during pregnancy included self-esteem, spirituality, pregnancy support, good nutrition, prenatal care, and community resources. Protective factors for non-pregnant women were self-esteem, spirituality, social support, health literacy, community support and community resources, and societal factors. For children and adolescents, relevant protective factors were self-esteem, positive role models, nutrition and physical activity, and community support. The identified factors are community assets or strengths that mitigate or eliminate maternal and child health risks in families and communities residing in low-income neighborhoods, which must be considered in developing effective maternal and child health interventions.

Keywords: *Community-based participatory research (CBPR), maternal and child health, life course perspective, protective factors, qualitative research*

INTRODUCTION

The disparity in birth outcomes between Black and White Americans is one of the most persistent and striking health disparities in the U.S. Black infants are twice as likely to die within the first year of life and have higher rates of low birth weight and preterm birth than White counterparts (Hauck et al., 2011; Salihu et al., 2011; Tucker et al., 2007). To explain this disparity, researchers are exploring relationships between healthcare, social, environmental, bio-behavioral, economic, and structural factors over the life course (e.g., racism) and across generations (Lu & Halfon, 2003). In this context, the life course perspective (LCP) has been proposed as an overarching theoretical framework to guide multidisciplinary research in racial/ethnic disparities in birth outcomes (Lu & Halfon, 2003).

The LCP explains how risk and protective factors at the individual, relationship, community, and societal levels influence health over the life span (Centers for Disease Control Prevention [CDCP], 2011; Hellserstedt, 2013). The LCP suggests that conditions a mother is born into and grows up in, as well as her pregnancy circumstances, are all important for reproductive success and future health (Lu & Halfon, 2003; Pies et al., 2012). In this context, G. H. Elder (1998) proposes the principles of life course theory, which includes: (1) Life-Span Development, which explains that both human development and aging are lifelong continuous processes; (2) Human Agency, which states that persons as individual agents shape their lives through the choices and actions they take but within the constraints and opportunities of their socio-historical circumstances; (3) Time and Place, which highlights the influence of the historical times and places on the life trajectories of individuals and communities; (4) Timing, which focuses on the consequences of life transitions, events, and behavioral patterns that vary according to their timing in a person's life; (5) Linked or Interconnected Lives, which illustrates that human lives are interdependent and that socio-historical influences happen within a network of shared relationships. Through these

principles, life course research emphasizes the study of cumulative exposures of protective and risk factors that contribute to good or poor health trajectories (Elder & Giele, 2009; Hellerstedt, 2013; Lu et al., 2010). Studies have suggested that Black women residing in the U.S. may be exposed to fewer protective and more risk factors throughout their life course than White women (Lu & Halfon, 2003).

Although risk and protective exposures are equally vital to optimal health, most studies have focused solely on the risk factor exposures faced by vulnerable populations (Salinas-Miranda et al., 2017). For example, there is evidence that Black women are more likely to be exposed to discrimination and more social stressors (Nuru-Jeter et al., 2009). Moreover, the disparities persist even for Black women who are highly educated and with higher incomes, suggesting that American women living in the same socioeconomic category may not have the same life experiences (Lu & Halfon, 2003). Racism is also a factor that exerts its influence over the life course (Nuru-Jeter et al., 2009), affecting adults and children. In contrast, the evidence on protective factors specific to maternal and child health remain scant and loosely defined. Some hypothesized protective factors include resiliency (stress-coping mechanisms), healthy relationships, and health-promoting policies (Hellerstedt, 2013).

The traditional public health approach emphasized a deficit model which viewed communities as problems that need to be fixed (Hellerstedt, 2013). In clear contrast to such traditional views, strengths-based approaches, such as community resiliency, appreciative inquiry, and asset-based mapping analyses, focus on community protective factors that foster resilience (Zimmerman, 2013). Such positive perspectives represent a paradigm shift that views communities as valuable assets that have the capacity to fully engage themselves and their residents to achieve optimal health (Zimmerman, 2013). In line with the current asset-based approaches in maternal and child health, our

study adds information on specific protective factors that are relevant for disadvantaged communities of color (Friedeli, 2012; Lightfoot, McCleary, & Lum, 2014; Morgan & Ziglio, 2007; Schooley & Morales 2007). Other authors have used strengths-based approaches, but studies that capture low-income neighborhood residents' perspectives are less common. Participatory action research (PAR) methods are well-suited to apply a strengths-based approach to understand disparities (Minkler et al., 2003) and capture the unique perspective of the community members themselves in explaining the protective factors that lead to optimal health. Maternal and child health programs could benefit from a greater focus on community-centered and community-driven approaches to understanding disparities in MCH. The health care field needs to integrate PAR into community health needs assessments and make informed decisions based on the community perspective (Wallerstein & Duran, 2006). Research using the LCP can be significantly enhanced through the use of community-based participatory research (CBPR), a strategy that utilizes the intimate participation of community residents in every decision-making phase of the project (Blumenthal, 2011; Israel, 2005; Minkler & Wallerstein, 2003; Schulz et al., 2002; Wallerstein & Duran, 2006). CBPR is a useful technique for collecting the community perspective and results in culturally-tailored public health interventions that are more pertinent to the lived experiences of community residents (Blumenthal, 2011; Israel, 2005; Minkler & Wallerstein, 2003; Schulz et al., 2002; Wallerstein & Duran, 2006). Therefore, using the CBPR approach to frame the inquiry and the LCP as the guiding theoretical framework, this study explored maternal and child health protective factors from community residents' perspectives.

MATERIAL AND METHODS

We conducted this study as part of a mixed-methods CBPR project, funded by the National Institute on Minority Health and Health Disparities (NIMHD/NIH). Details regarding the specific methodology of the larger study are described elsewhere (Salihu et al., 2015; Salihu et al., 2016; Salinas-Miranda et al., 2015; Salinas-Miranda et al., 2017). We conducted this study within a targeted urban community that encompassed five zip codes in Hillsborough County, FL, USA. The community's estimated population was 110,451 in 2013 (U.S. Census Bureau, 2013). Neighborhoods within this targeted area are largely impoverished (U.S. Census Bureau, 2013; Florida Department of Health, 2013). Within the study area, the majority of residents are Black (60%), followed by White (18%), Hispanic/Latino (12%), and other (10%) (U.S. Census Bureau, 2013). At the start of the study, Hillsborough County's Infant Mortality Rate (IMR) was 7.56 per 1,000 live births, (Florida Department of Health, 2013), above the Health People 2030 target of 5.0 infant deaths per 1,000 live births. Infants born to Black mothers within Hillsborough County die at an IMR of 13.9. In contrast, the IMR for White babies is 5.5 deaths per 1,000 live births (Florida Department of Health, 2013), demonstrating a disturbing Black-White disparity in IMR.

This project built and expanded upon an existing 15-year community-academic partnership between REACHUP, Inc., and the University of South Florida (USF) (Salihu et al., 2011). REACHUP is a community-based, 501(c)3 nonprofit organization that provides healthy start services and risk reduction services to mothers and children. Prior CBPR collaborations between USF and REACHUP have significantly reduced preterm birth in the area by 30% (Alio et al., 2013; Salihu et al., 2009; Salihu et al., 2011). We used this successful CBPR platform to plan, implement, analyze, and disseminate this project and created a Community Advisory Board (CAB). The CAB comprised eight active members in the target area with a long history of grassroots development work, who were well connected with various local organizations. Many members were past CBPR participants and therefore possessed expertise in research activities (Alio et al., 2013; Salihu et al., 2009; Salihu et al., 2011). They served as

The Community Advisory Board (CAB) and academic researchers at a bi-weekly meeting, hand-coding the paper-based focus group transcripts.

male adults and children 12 years of age or older with parental consent, and able to speak English or Spanish.

Individuals interested in participating in a focus group called the phone number provided in study flyers, and community research staff answered questions and provided study information. Informed consent was obtained, and $10 incentives were provided (an amount deemed acceptable and non-coercive). We monitored the participants' sociodemographic characteristics to prevent overrepresentation in any particular subgroup. Focus groups were conducted in private rooms in designated community locations and held at times most convenient for participants.

Trained community moderators facilitated the focus groups. Community co-moderators and graduate student volunteers at the USF College of Public Health enrolled in a CBPR doctoral-level course took detailed field notes. We used a semi-structured questioning guide with questions developed with CAB members.

The facilitators provided a summary of examples and asked for any additional feedback. We used probes when needed to encourage discussion. All focus groups were recorded with a tape recorder and transcribed verbatim, except for one focus group where we only took field notes. Transcription of each focus group was performed by a trained community member who was familiar with the local language. In order to maintain confidentiality, identifiable information was deleted from transcripts.

gatekeepers between the academic researchers and the larger community and represented the community's racial/ethnic diversity. CAB volunteers took ownership of the study plan and protocol. They participated in bi-weekly face-to-face CBPR trainings and discussion meetings to ensure methodological rigor and develop a shared vision of the research process. All CAB members completed a Human Subjects Protection Certification course. The study was approved by the USF Institutional Review Board (IRB) and the UF IRB.

Trained community members conducted ten focus groups. CAB members recruited participants through word of mouth, email, flyers, social networks, and social media. We used purposive sampling, a sampling strategy used commonly in qualitative research that carefully selects participants based on their experiences, rather than random sampling.

Purposive sampling was used to identify individuals who could provide insight into the community context (Krueger & Casey, 2000). Participants were selected based on the following criteria: residency of five years or more in any target ZIP code, interested in sharing views about mothers and infants in the community, female or

Trained CAB members hand-coded paper-based transcripts, using flipcharts, sticky notes, and scissors (Krueger & Casey, 2000), facilitated by USF researchers during one of our bi-weekly meetings. Hand coding is a commonly used qualitative method signifying that coding was done through comprehensive review and re-

review of transcripts and not using a computer program (Patton, 2002). We conducted exploratory thematic analysis (Sandelowski & Barroso, 2003) by reading the data while reflecting on study aims. We then coded meaningful categories by dividing CAB members into groups of two to three by focus group transcript and creating codes from the community perspective. We listed the categories and discussed them for contrast and comparison across focus group transcripts, which led to the identification of concurrent themes across focus groups (Sandelowski & Barroso, 2003). Illustrative quotes were selected to represent themes (Strauss & Corbin, 1998). Findings from early analyses were presented in two community forums to check for validation. These early findings also led to the creation of a community needs assessment survey (Salinas-Miranda et al., 2015) and a community-based dietary intervention (Salihu et al., 2016). Risk factors were published in a separate article (Salinas-Miranda et al., 2017).

Two members of the research team then preserved written notes digitally with NVivo qualitative analysis computer software, including illustrative quotes (NVivo qualitative data analysis Software; QSR International Pty Ltd. Version 11, 2015) to maintain a record of the analysis and to conduct conceptual/thematic descriptions (Sandelowski & Barroso, 2003). We used axial coding, an established qualitative data analysis technique of linking categories to subcategories and connecting categories at a higher conceptual level (Strauss & Corbin, 1998). This process involved coding and re-coding until agreement on the emerging themes was achieved by the CAB members and researchers (Strauss & Corbin, 1998). From our themes, subthemes, and continuous coding and re-coding, hierarchical patterns developed, and we conceptualized a model based upon these relationships.

RESULTS

A total of 78 community residents participated in the focus groups. The distribution of focus groups was as follows: one focus group from each of the five target ZIP codes, one focus group comprising fathers only (mixed ZIP codes), two focus groups in Spanish for Spanish speakers (mixed ZIP codes), and two focus groups comprising adolescents (mixed ZIP codes). Table 1 presents the sociodemographic characteristics of participants. The majority of participants were

Table 1

Participant sociodemographics

Characteristics	%
Age	
12-18 years of age	10.3
19-40 years of age	46.1
41 and older	43.6
Gender	
Male	38.7
Female	61.3
Ethnicity	
Hispanic or Latino	20.5
Not Hispanic or Latino	79.5
Racial Categories	
American Indian/Alaska Native	2.6
Asian	2.6
Native Hawaiian or Other Pacific Islander	2.6
Black or African American	61.5
White	25.6
More than One Race	5.1
	(N=78)

adults. The two focus groups conducted with children 12 to 18 years of age represented 10.3% of the participants. The majority of participants were female (61%), non-Hispanic or Latino (80%), and Black (62%).

Protective Factors

Across focus groups, community residents mentioned several protective factors that frequently contribute to maternal and child

health. We organized these factors as themes around three life periods, under the life course perspective: including factors affecting the health of children and adolescents, women in general (preconception period), and women during pregnancy. Some factors cut across life periods, whereas other factors were discussed with particular emphasis for one or two life stages. Within each life period, we identified constructs that fit within the broader themes of personal and

family factors, health issues, and community and economic factors. We were also able to identify factors (Figure 1) that are more relevant for the different life periods based on community members' perspective and potential cumulative pathways of factors that may continue to exert their protective effects in a continuous manner.

Protective factors that affect the health of children and adolescents

Protective factors that affect the health of children and adolescents were identified and classified into subthemes such as self-esteem, positive role models, nutrition and healthy diet, physical activity and recreation, and community support. Quotes are presented in Table 2.

Self-esteem was a protective factor that emerged throughout all the focus groups and across all genders/ages, having its origins in childhood and adolescence. Participants noted positive role

Figure 1

Possible pathways of maternal and child health protective factors throughout the life course identified by community members

	Factors affecting Adolescents and Children	Factors affecting Preconceptive Women	Factors affecting Pregnant Women
Personal and Family Factors	▸ Self-esteem ▸ Positive role models	▸ Self-esteem ▸ Spirituality ▸ Social support	▸ Self-esteem ▸ Spirituality ▸ Support during pregnancy
Health issues	▸ Nutrition and healthy diet ▸ Physical activity and recreation	▸ Health literacy	▸ Good nutrition ▸ Prenatal care
Community and Economic Factors	▸ Community support	▸ Community support ▸ Community resources ▸ Societal factors	▸ Community resources

Table 2

Protective factors that affect the health of children and adolescents

Personal & Family Factors	
Self-Esteem	*"Feeling good about yourself, having self-esteem."*
Positive role models	*"My stepfather took me out in the yard on Saturday … the first thing he told me was, 'Boy, keep you a rake and a lawnmower because the grass won't never stop growing.' And that was… You know, I was nine years old and right now today I own a tree service and landscaping service… I always remember, that's why I renamed the business after my stepfather because he told me that… Don't roll that weed, get a weed eater."*
Health Issues	
Nutrition and Healthy Diet	*"My momma had me in the garden…to raise vegetables and … health foods and stuff, you know, organic type of stuff…And then that helps you, too, you know, environmentally. And then you have growin' trees and stuff in your neighborhood and stuff like that. Plant a tree or something."*
Physical activity and recreation	*"You know, there used to be a lot of after school programs at the parks and everything for the kids to go get involved in, even during the summer programs. But nowadays they done took away all those programs, now the kids don't have nothing to do but walk around the street, then there's nothing to do...But if you left those programs and you really implemented programs and encouraged those programs, the kids will become better kids, role models, that's because the kids are the future."* *"Creating programs within the community, where they can come and being a public role model without just listening to the music all the time. The education at the YMCA, you know, they have… teaching them on health... the kids don't get that today. So mainly in the health issues, that's what we're lacking."* *"I think children need to be involved in school activities. Like, if your daughter's a cheerleader, you should find time to go and watch her as she's cheering. Your son playing football or some type of sports. Because I go and volunteer at the high school concession stand, and the parents do not come to watch their kids. And right there is no support…Yes, there was only two high schools, but it was a community effort, you went and supported your child. And you had worked just as hard all day, and then you had to get a ride."*
Community & Economic Factors	
Community Support	*"Yeah, the whole neighborhood raise them."* *"Big Brothers, Big Sisters, United Way, and others. Well, really, to keep our teenagers staying healthy we just need a little help… Just like encourage them a lot and try to do what's right and, you know, go by… I also think like the Big Brothers program or something like that, maybe finding like a role model, somebody that you personally know that your child looks up to this person and try to talk to them maybe behind the child's back to say, hey, my child's struggling with this, this and that, I've tried, you know, but he doesn't or she doesn't want to hear it from me, you know, could you help me out with this."* *"The school system has placed some more emphasis on healthy teens or, you know, I would say that can be attributed to a lot of positives going on in the community."* *"Exposing your kids. You can live in a rough neighborhood, like I grew up in…we went outside the neighborhood to museums. And I think a lots of time we stay within our community. But going outside and that really enlighten you. Expose your mind."*

models in their lives and shared their positive experiences, which they recommended should be emulated through positive role models for children.

Some participants had specific family members or mentors that encouraged skills and motivated the individuals, while other participants commented on the importance of programs for children who may not have such positive role models. Programs such as Big Brothers, Big Sisters were mentioned frequently and praised by participants.

A healthy diet was mentioned repeatedly as important for health, especially for children and adolescents. One participant discussed how her mother taught her to grow vegetables in a garden, which she described as leading to healthier eating. The theme of nutrition and a healthy diet does not exist in isolation, rather it is also related to the theme of positive role models. Participants stressed that parents have an essential role in the food their children eat and suggested a need to educate parents and families on the importance of a healthy diet and nutrition for health. Nutrition, physical activity, and recreation among children were perceived as very important, as indicated by the emphasis and rich examples provided. One participant noted how after-school programs were beneficial in helping kids with physical activity. However, participants noted that such programs are scarce within this community. Even though the lack of after school programs within this community is seen as a risk factor, participants indicated that physical activity and recreation are very important to youth and serve as protective factors. Participants stressed the need for creating community programs for physical activity and general health promotion among adolescents. These health promotion programs and programs that promote physical activity and recreation seemed to have existed more in the past, and the participants commented that such programs are missing nowadays.

Participants also indicated the key role of parents in supporting children's active living. For instance, one participant indicated that although kids may be involved in sports -- mentioned as protective to health -- parents often do not provide enough social support. Social support from parents was discussed as a protective factor

that was also more present in the past but seems to be lacking today. Lastly, community resources for children and adolescents were described as the "*it takes a village*" (implying the need for many people's involvement). One participant noted that there were community resources that could help parents establish better communication with their children. These resources are often underutilized, as depicted in Table 3. These resources could also provide solutions to barriers previously mentioned, such as the low number of parents who show up to their children's sporting events. Another participant noted beneficial changes in the local school health system that may channel positive change in adolescents. These changes were connected to the previous theme of self-esteem. On the other hand, participants recognized the need for accessing outside community resources to support children's health. Although taking children to museums and other places outside of the community were described as protective factors, there was an emphasis on a need to bring more programs to the community.

Protective factors that affect the health of women in general (preconception period)

Subthemes identified for women in general offered a wider breadth of protective factors (Table 3), including spirituality, health literacy, community building, and societal factors in relation to race and ethnicity. Though this cohort offered unique subthemes, some subthemes were repeated, such as self-esteem and various forms of social support.

The importance of spirituality and related practices (e.g., prayer) were mentioned frequently as protective factors for women. Participants indicated that the church has always been the center of the community, explaining that churches do a lot of good for the community. However, participants also emphasized that churches should work together more intensively to solve community problems, as many churches within

Table 3

Protective factors that affect the health of women in general (preconception period)

Personal & Family Factors	
Spirituality	*"So, every day have some spiritual time with Him to read in that Bible."* *"Prayer and support help you to stay healthy."*
Self-Esteem	*"You need to know how to come back, even though you fail, you need to know how to step back up."*
Social Support	*"Support. Common support. Family support. You know, support from any and everybody."* *"Like I say, it's a big job cleaning the house up, keeping the house clean is a big job. And then we as men should recognize that and try to help our spouse, and I think that's going to help. When you're helping a woman and doing that, that going to make her love you more."*
Health Issues	
Health Literacy	*"Being caught up-to-date, you know, through the clinics and stuff. The clinics giving out information about diseases and - you know- different type of sickness."* *"If people are educated about health care and especially minorities because we're at risk for so many things like high blood pressure and diabetes; and I think if people are educated about the dangers and what can happen to you with these diseases, then they're more likely to take care of it. Preventive health care is another thing."*
Community & Economic Factors	
Community resources and community building activities	*"I think that we should implement more opportunities in our neighborhoods for all of our people to come together, maybe a place of recreation for the whole community. I did hear one time about people having community garden where they got together and they, the little ones, the older ones, the ones in the middle, you know, everybody got a chance to participate and be proud of what they created which also brought unity to the community and people to know who each other were."* *"We need to get to know each other again."* *"They have a bus that does mammograms, they do blood pressure check, there's a bus."* *"I think going into the different neighborhoods at least once a month or once a week, letting them know this is available to you."* *"Have like community outreach where you can come get… Because I know back in the day, if your baby needs shots, they're like a Saturday or Sunday, you know, when I was a kid because my mom used to take us, the public housing would have on Saturdays where you could come in, get your baby shots, you know, get them checked for colds and, you know, different stuff like that. They don't do that anymore."*
Societal factors	*"I think it's lack of opportunities, maybe how society sees the Black woman. And it shouldn't be like that but it is. Because they're made to…feel inferior but they don't realize, if it wasn't for a woman, we would have nobody to carry us…if we would concentrate on more opportunity, it could get a lot better… if you have more opportunity, you'll get out of those things."*

the community do not communicate and work with each other.

Self-esteem was again mentioned as a protective factor that affects the health of women in general. Participants also emphasized the importance of

resilience. Although self-esteem and resilience were noted as significant protective factors for women, participants emphasized a need to connect women with more mental health resources and other community programs that build self-esteem and resilience. Participants stated that there are many resources available but residents need to be made aware of these resources and connected to the appropriate programs. Several participants noted the protective role of social support from close relationships and other social connections. A male participant stressed the role of instrumental social support from men. Participants emphasized that adequate relationship support and support from family members and friends were critical protective factors that helped women reduce and manage stress.

Focus group participants indicated the importance of health literacy as a protective factor. One female participant discussed being informed about her health as an important protective factor for women's health. One female participant also pointed to the importance of community-tailored health education and its potential to prevent health problems in the community. Participants further elaborated that knowledge acquisition and the personal practices associated with information sharing were key determinants for a woman's health.

Participants talked about the importance of community building activities and community resources. Both a community garden and a community center were mentioned as important protective factors for health because they build community unity and a sense of togetherness. Even though these were seen as protective, many participants said that community gardens and community centers were lacking in this community and emphasized that creating opportunities for neighbors to come together would be protective through support and community unity. Participants also stressed the importance of community outreach programs and health fairs as protective. Some mentioned them

as being abundant in the community and noted that community outreach is a strength of this community. Other participants indicated there is a need for more advertising and marketing of these events. Other participants mentioned a greater need for programs within this community and that programs like this used to exist but are less common today.

Other participants mentioned societal factors, such as socioeconomic opportunities for Black women. When participants discussed social and economic opportunities for women in general, they focused on their absence and mentioned the need for more significant opportunities and changes to attitudes and stereotypes. In this regard, greater social inclusion of Black women, improved social and economic opportunities, positive attitudes toward Black communities, and the elimination of negative stereotypes are in line with strategies for healing racism and addressing historical trauma (Williams et al., 2019). Although not explicitly mentioned, these factors emerged from the conceptual analysis.

Protective factors that affect health during pregnancy

Protective factors for pregnant women echoed similar themes and subthemes as children and adolescents and preconception periods. However, there was a unique emphasis on spousal or partner support during this period in a woman's life (Table 4).

Self-esteem and positivity were mentioned as important protective factors that affect health during pregnancy. Participants described having a positive mental outlook and psychological well-being as necessary. They talked about surrounding oneself with optimistic people, as positive role models, and accepting the pregnancy if you are going to have the baby. Another participant discussed the importance of setting personal goals. Residents emphasized the importance of remaining optimistic, even if the

Table 4

Protective factors that affect health during pregnancy

Personal & Family Factors	
Self-Esteem and Positivity	*"Just hanging around positive people. Even if you are pregnant out of wedlock, don't hang around someone who can always talk you down."* *"Working hard for something. Having a goal in mind. Being focused on something."*
Spirituality	*"You ought to remind the young woman that carrying the child is [to] read your Bible to your child every day. Read the Bible to her. That's one of the key things I always tell them when I say take them vitamins, drink plenty of water …out loud so the baby can hear what you're saying."*
Support during pregnancy/Father support	*"Having a good support system. And, preferably if it's the dad of that child."* *"So she can have some time to herself. If it's nothing but to take a nap or take a walk, she can have a few minutes to become just herself and not have to be a momma or this or that or whatever, she can just be herself and just have a few minutes. You know, and that's what I can actually do to help somebody to be, you know, just to give her a chance to reset her mind. She need emotional support from her significant other or family members because whatever affect her will affect the baby."* *"And for new mothers before they even have their babies…the support groups, where they can get together and they can talk about all of those things that they can do for their babies once they are born… I think that would be a really good requirement for pregnant women to have to go through something that where they would have some insight on what they're going to… just to teach them what they are going to be facing. There should be a requirement for every pregnant mother to go through something like that, to just be aware of the changes that's going to happen, the mother and the father as a matter of fact."*
Health Issues	
Good nutrition	*"Eating right and eating properly"* *"I don't know, but he may not understand it totally but he knows that a pregnant woman need to eat right."*
Prenatal care	*"Taking your prenatal vitamins"* and *"Get the shots."* *"Also, with women with the things that we can do is we can also… Well, what they can do to be healthy is make sure they follow through with their doctor appointments, make sure they take their medications, make sure that they eat well, and do… And we can pray that daddy steps in and gives her a hand, you know, if he don't do nothing but rub her feet because they swollen up..."*
Community & Economic Factors	
Community resources	*"I feel that if they had somewhere to go where a pregnant…a bunch of them pregnant women can sit down and talk and be amongst themselves and talk about things and have a avenue where they can air out problems or get help with the children or the babies…you're taking another step in your life, to prepare them… like a support group."*

pregnancy was unplanned. For women in general, spirituality was mentioned as an important protective factor for pregnant women.

The residents cited support from friends and family and the father as a protective factor for pregnant women. Community members indicated companionship is an essential social support aspect, and others suggested that instrumental and emotional support were also critical. Some participants also indicated specific formal support sources, such as pregnancy support groups and parenting education classes for new mothers. A support group like the one mentioned would provide various types of social support, including emotional and informational. It would also offer education and tools to help better care for babies.

Participants noted the importance of adequate nutrition to protect against pregnancy complications. The importance of a healthy diet for pregnant women was frequently mentioned and often stated that a healthy diet helps pregnant women to *"be their best"* during gestation. One participant also noted the partners' role in knowing what a healthy diet during pregnancy is, emphasizing the importance of nutrition as a protective factor for pregnant women. It also highlights the importance of social support, especially support for healthy eating.

Residents noted the importance of keeping up prenatal care appointments recommendations. Participants indicated that partners could help women adhere to prenatal care measures. The help partners and other friends/family members provide to pregnant women to keep up with prenatal care emphasizes the importance of instrumental social support as a protective factor for pregnant women.

Community members also highlighted several resources available in the community that women could access to get support and health-related resources (e.g., insurance and nutrition education). These community resources included churches, food banks, and programs for mothers and babies in the area that serve as protective for

pregnant women. Although some participants mentioned the abundance of resources in this community as a community strength, others said these resources are lacking. Connecting with a support group to receive various types of social support and pregnancy education was also mentioned as protective for pregnant women under the community resources theme.

DISCUSSION

This study used a CBPR strategy of inquiry through focus groups and the LCP as the theoretical framework to examine community residents' perspectives of maternal and child health protective factors. Our goal was to obtain a better understanding of how life protective factors contribute to the health of women and children in low-income neighborhoods and communities of color.

Lu and Halfon (2003) first theorized the LCP, suggesting that disparities in birth outcomes are not only caused by pregnancy exposures, but by the cumulative exposure throughout the life course. In 2010, Lu and colleagues developed a 12-part plan to reduce the disparities in birth outcomes using LCP (Lu et al., 2010). The LCP emphasizes that exposures may be particularly salient at critical time periods, with three periods identified (in utero, the first three years of life, adolescence) as critically important for social, behavioral, and biological development (Lu et al., 2010). The LCP also posits that the broader community environment strongly affects health, emphasizes the importance of transitions all individuals experience throughout life and places particular emphasis on equity (Hellerstedt, 2013).

Our study found qualitative evidence for life course theory principles. Life span development was assessed through the perceptions of community residents, which provides views within the community context. However, our study is not a longitudinal account of the individual participants experiences. Instead, our questioning strategy specifically asked the participants' views about the

factors that are perceived to be associated with well-being and health for three life span stages (mothers, children, and youth). By asking about their perceptions about health during life span stages, the participants reported their experiences within their community context. Thus, commonalities emerged across the lifespan stages such as social support. For each stage, the rich responses provided by the participants illustrate the importance of assessing health as a process and beyond the present immediate context.

On the individual level, participants identified self-esteem as a protective factor throughout all life periods and positivity in specific life periods. The constructs of self-esteem and positivity are consistent with previously theorized protective factors of the LCP, including personal resiliency (Hellerstedt, 2013). Resilience is a set of skills that are reinforced by healthy relationships that allow individuals to cope in the face of adversity (McDonald et al., 2016). There is evidence that the influence of community social networks, social stressors, and personal resources all confluence to predict self-esteem among women (Woods et al., 1994). Self-esteem as a protective factor may also be eroded by exposure to traumatic experiences (Matheson et al., 2015). Improving self-esteem, fostering mental well-being, increasing self-efficacy, and ultimately enhancing self-identity among women and children may be important untapped mechanisms to address maternal and child health disparities in communities of color (Matheson et al., 2015). Programs that increase self-esteem, positivity, and resiliency, especially among youth, would be an essential social investment to improve the overall health of communities, resulting in healthier mothers and babies (Lu & Halfon, 2003).

One of the most salient life course theory principles illustrated by participants was the one related to Interconnected Lives/Linked Lives, which was depicted in several quotes that mentioned social support and community support for children, adolescents, and pregnant women. Notably, the importance of parents and

> *We speculate that given that the majority of respondents were racial/ethnic minorities, it is possible that they have been exposed to discrimination and racism. Several studies indicate how racism (micro and macro aggressions) is associated with low self-esteem and hopelessness.*

community support is an illustration of the principle of Linked Lives, showing the interconnectedness of community residents during all three stages assessed. This notion of linked lives is contrasted to the narrow view of health and healthcare as a personal issue. Individual choices and personal resources are important (Agency principle, which explains the human capacity to make changes themselves and own the capacity to have resilience), but they are constrained by the social and historical context. Some examples of human agency noted by participants were the role of spirituality as a personal resource, as well as self-esteem. Those aspects were cited as health-promoting factors over the life course. However, one's spiritual beliefs are also shaped to a certain extent by the cultural and historical background of communities (e.g. Black churches as sources of spiritual support during times of segregation).

Self-esteem was a protective factor that emerged throughout all the focus groups and across all genders/ages, having its origins in childhood and adolescence. Participants noted positive role models in their lives and shared their positive experiences, which they recommended should be emulated through positive role models for children. Self-esteem is a self-concept construct that is also shaped by one's identities (i.e., gender identity) within the cultural milieu of the community (Biro, 2006). However, the fact that it was mentioned across life stages is intriguing. We speculate that given that the majority of respondents were racial/ethnic minorities, it is possible that they have been exposed to

discrimination and racism. Several studies indicate how racism (micro and macro aggressions) is associated with low self-esteem and hopelessness.

Conversely, the role of high self-esteem as a protective factor for ethnic minorities is understudied. A cross-sectional survey study by Fisher and colleagues (2017) found a protective effect of ethnic identity on youth substance use, mediated by self-esteem. More studies are needed to examine the relationship between self-esteem, ethnic identity, and health over the life course.

Consistent with previously theorized relationship level LCP protective factors (Lu & Halfon, 2003; Hellerstedt, 2013), participants identified social support throughout all life periods, with participants identifying positive role models as important for children and adolescents and support during pregnancy, particularly father support, as necessary for pregnant women.

On the community-level, and in accordance with previously theorized community-level LCP protective factors (Lu & Halfon, 2003; Hellerstedt, 2013), the importance of prenatal care among pregnant women emerged as a protective factor. The LCP suggests "improving the quality of prenatal care" and "expanding healthcare access over the life course" (Lu et al., 2010). The LCP recognizes the significance of prenatal care to early fetal programming and optimal health over the lifespan (Lu & Halfon, 2003). However, the LCP emphasizes that prenatal care cannot reverse the effects of early life chronic social stressors and cumulative risk factors (Lu & Halfon, 2003). Prenatal interventions may better improve birth outcomes if they begin before conception, as a vital part of women's health care during reproductive age and over the whole life course (Lu & Halfon, 2003). The LCP also suggests that eliminating disparities will involve not only improving individual medical care, but also build stronger communities that foster the health of women and children throughout their lives (Lu & Halfon, 2003).

> *Greater social inclusion of Black women, improved social and economic opportunities, positive attitudes toward Black communities, and the elimination of negative stereotypes are in line with strategies for healing racism and addressing historical trauma.*

Community-level factors were mentioned as protective factors in all life stages (Lu & Halfon, 2003; Hellerstedt, 2013). Participants highlighted several community resources available that women could access to get support and health-related resources, such as churches, food banks, and programs for mothers and babies in the area. Participants also talked of the importance of community building activities and community resources, mentioning community gardens and community centers as critical protective factors because they build community unity, but noted that these programs were scarce. The LCP plan proposes strengthening social connectedness/capital and investing in community building and urban renewal. Community building must begin with economic development, infrastructure development, accessible and safe parks and recreational facilities, and political development (Lu et al., 2010).

Societal factors were mentioned to be protective, in accordance with previously theorized LCP societal factors (Lu & Halfon, 2003; Hellerstedt, 2013). Participants noted a need to change stereotypical attitudes and the need for more significant opportunities for Black women. This finding highlights the need to address racism and mitigate associated risks, which is consistent with Nuru-Jeter (2009), in a study exploring childbearing Black women's experiences with racism, Nuru-Jeter's (2009) findings suggest that racism measures focus on the lasting impact of institutionalized, vicarious, and internalized racism on women's experiences throughout their life. Our findings are also consistent with Pies et

al. (2012), who suggested focusing on social determinants, such as efforts to undo racism, that will continue into future generations (Pies et al., 2012).

Our study has several notable strengths. To our knowledge, this is one of the first studies that has combined the LCP as a theoretical framework with the strategy of CBRP, creating an LCP-CBPR hybridization to identify protective factors for optimal maternal and child health using community residents' perspectives. Combining life course conceptualization with intimate community involvement has built a strong foundation, revealing how the target community perceives maternal and child health protective factors as leading to optimal health.

Despite these strengths, our findings should be understood within certain limitations. Even though we utilized purposive sampling, selecting participants for their specific experiences, self-selection bias may have been present because community residents who chose to participate in the focus groups may be more interested in this topic than those who did not participate. Additionally, using qualitative methods can provide insightful information concerning a specific topic and generate hypotheses, but it is difficult to generalize our results to other communities.

Even though risk factors are described in a previously published article (Salinas-Miranda et al., 2017), to fully conceptualize the LCP, it is important to examine protective and risk factors simultaneously. This article only describes the protective factors that lead to optimal health.

Some of our findings discuss protective factors that the participants identified as being protective, but that might not actually exist within this community. In this regard, the lack of protective factors may be considered as a risk with a detrimental effect on the community. Although this community may lack certain protective factors, the residents still identified these factors as protective to health, so we included them within these findings.

Finally, this community is primarily comprised of socioeconomically disadvantaged residents of color; however, our study did not specifically target African American women. The CAB recommended that we query everyone in the community about their perspectives. We considered this a positive way to engage the entire community in a discussion about the health of mothers and babies. Our perception is that this strategy of asking everyone about MCH issues fostered a wider community engagement, as opposed to other approaches that only engage women or men. We recommend that future studies address African American women's, male's, and children's/adolescents' perceptions separately.

We believe the current study has achieved an appropriate balance between community participation and rigor. We recommend that future studies capture the perspective of community residents in other localities, as our results are not generalizable and are context-dependent (Oetzel et al., 2018).

REFERENCES

Alio, A. P., Lewis, C. A., Scarborough, K., Harris, K., & Fiscella, K. (2013). A community perspective on the role of fathers during pregnancy: a qualitative study. *BMC Pregnancy Childbirth, 13*, 60. doi:10.1186/1471-2393-13-60.

Biro, F. M., Striegel-Moore, R. H., Franko, D. L., Padgett, J., & Bean, J. A. (2006). Self-esteem in adolescent females. *J Adolesc Health*, 39(4), 501-507. doi:10.1016/j.jadohealth.2006.03.010

Blumenthal D. S. (2011). Is community-based participatory research possible? *American Journal of Preventive Medicine*, 40, 3, 386–389.

Centers for Disease Control Prevention (2011). CDC Health Disparities and Inequalities Report United States, 2011. *Morbidity and mortality weekly report,* 60, 1-114.

Elder, G. H., & Giele, J. Z. (2009). *The craft of life course research*. New York; London: Guilford Press.

Elder, G. H., Jr. (1998). The life course as developmental theory. *Child Dev*, 69(1), 1-12.

Fisher, S., Zapolski, T. C. B., Sheehan, C., & Barnes-Najor, J. (2017). Pathway of protection: Ethnic identity, self-esteem, and substance use among multiracial youth. *Addictive Behaviors*, 72, 27-32. doi:10.1016/j.addbeh.2017.03.003

Florida Department of Health. (2013). FloridaCHARTS: Infant deaths per 1,000 live births 3-year rolling rates. Retrieved 01/03/19, from Florida Department of Health. Bureau of Vital Statistics. FloridaCHARTS.com.

Friedeli, L (2012). What we've tried, hasn't worked': The politics of asset based public health. *Critical Public Health,* 23, 2, 131–45.

Hauck, F. R., Tanabe, K. O. & Moon, R. Y. (2011). Racial and ethnic disparities in infant mortality. *Seminars in Perinatology,* 35, 4, 209-220.

Hellerstedt, W. (2013). The life course framework: Overview and key concepts. In Healthy Generations: A publication of the Center for Leadership Education in Maternal and Child Public Health: Spring 2013. Life Course: Nurturing Early Growth and Development.

Israel, B. A. (2005). *Methods in community-based participatory research for health*. San Francisco, CA: Jossey-Bass.

Krueger, R. A., & Casey, M. A. (2000). *Focus groups: a practical guide for applied research*. Thousand Oaks, CA: Sage Publications.

Lightfoot, E., McCleary, J. S., and Lum, T. (2014). Asset mapping as a research tool for community-based participatory research in social work. *Social Work Research, 38, 1. 59-64.*

Lu, M. C., & Halfon, N. (2003). Racial and ethnic disparities in birth outcomes: a life-course perspective. *Maternal and Child Health Journal, 7*(1), 13-30.

Lu, M. C., Kotelchuck, M., Hogan, V., Jones, L., Wright, K., & Halfon, N. (2010). Closing the Black-White gap in birth outcomes: a life-course approach. *Ethnicity and Disease, 20*(1 Suppl 2), S2-62-76.

Matheson, F. I., Daoud, N., Hamilton-Wright, S., Borenstein, H., Pedersen, C., & O'Campo, P. (2015). Where did she go? The transformation of self-esteem, self-identity, and mental well-being among women who have experienced intimate partner violence. *Women's Health Issues*, 25(5), 561-569.

McDonald, S., Kehler, H., Bayrampour, H., Fraser-Leea, N. Tougha, S. (2016). Risk and protective factors in early child development: Results from the All Our Babies (AOB) pregnancy cohort. *Research in Developmental Disabilities,* 58, 20-30.

Minkler, M., & Wallerstein, N. (2003). *Community-based participatory research for health*. San Francisco, CA: Jossey-Bass.

Morgan, A. & Ziglio, E. (2007) Revitalising the evidence base for public health: an assets model. *Promotion & Education* (Suppl 2): 17–22.

Nuru-Jeter, A., Dominguez, T. P., Hammond, W. P., Leu, J., Skaff, M., Egerter, S., ... & Braveman, P. (2009). "It's the skin you're in": African-American women talk about their experiences of racism. An exploratory study to develop measures of racism for birth outcome studies. *Maternal and Child Health Journal*, 13(1), 29.

Oetzel, J. G., Wallerstein, N., Duran, B., Sanchez-Youngman, S., Nguyen, T., Woo, K., . . . Alegria, M. (2018). Impact of participatory health research: A test of the community-based participatory research conceptual model. *BioMed Research International, 2018*, 7281405-7281405. doi:10.1155/2018/7281405

Patton. M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage Publications.

Pies, C., Parthasarathy, P., & Posner, S. F. (2012). Integrating the life course perspective into a local maternal and child health program. *Maternal and Child Health Journal*. 16, 3, 649-655.

Salihu, H. M., Adegoke, K. K., Das, R., Wilson, R. E., Mazza, J., Okoh, J. O., Naik, E., Berry, E. L. (2016). Community-based fortified dietary intervention improved health outcomes among low-income African-American women. *Nutrition Research,* 36, 8, 771-779.

Salihu, H. M., August, E. M., Alio, A. P., Jeffers, D., Austin, D., & Berry, E. (2011). Community-academic partnerships to reduce black-white disparities in infant mortality in Florida. *Progress in Community Health Partnerships, 5*(1), 53-66. doi:10.1353/cpr.2011.0009.

Salihu, H. M., Mbah, A. K., Jeffers, D., Alio, A. P., & Berry, L. (2009). Healthy start program and feto-infant morbidity outcomes: evaluation of program effectiveness. *Maternal and Child Health Journal, 13*(1), 56-65. doi:10.1007/s10995-008-0400-y [doi]

Salihu, H. M., Salinas, A., Smith, J. C., & Armstrong, K. (2011). Engaging fathers in behavioral parent training: listening to fathers' voices. *Journal of Pediatric Nursing, 26*(4), 304-311.

Salihu, H. M., Salinas-Miranda, A. A., Turner, D., King, L. M., Paothong, A., Austin, D., Berry, E. L. (2015). Usability of low-cost android data collection system for community-based participatory research. *Progress in Community Health Partnerships: Research Education and Action*. 10(2), 265-273.

Salinas-Miranda, A. A., King, L. M., Salihu, H. M., Berry, E., Austin, D., Nash, S., Scarborough, K., Best, E., Cox, L., King, G., Hepburn, C., Burpee, C., Richardson, E., Ducket, M., Briscoe, R., Baldwin, J. (2017). Exploring the life course perspective in maternal and child health through community-based

participatory focus groups: Social risks assessment. *Journal of Health Disparities Research & Practice,* 10, 1, 143-166.

Salinas-Miranda, A. A., Salemi, J. L., King, L. M., Baldwin, J. A., Berry, E. L., Austin, D., Scarborough, K., Spooner, K. K., Zoorob, R. J., Salihu, H. M. (2015). Adverse childhood experiences and health-related quality of life in adulthood: revelations from a community needs assessment. *Health and Quality of Life Outcomes*, 13(123): 1-12

Sandelowski, M. & Barroso, J. (2003). Classifying the findings in qualitative studies. *Qualitative Health Research* (*13*)7, 905-923.

Schooley, J., & Morales, L. (2007). Learning from the community to improve maternal–child health and nutrition: The positive deviance/hearth approach. *Journal of Midwifery & Women's Health,* 52, 4, 376-383.

Schulz, A. J., Parker, E. A., Israel, B. A., Allen, A., Decarlo, M., & Lockett, M. (2002). Addressing social determinants of health through community-based participatory research: The East Side Village Health Worker Partnership. *Health Education & Behavior*, 29, 3, 326-34.

Strauss, A., & Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures For developing grounded theory.* Thousand Oaks, CA: Sage Publications.

Tucker, M. J., Berg, C. J., Callaghan, W. M., Hsia, J. (2007). The Black-White disparity in pregnancy-related mortality from 5 conditions: Differences in prevalence and case-fatality rates. *American Journal of Public Health,* 97, 2, 247-251.

U.S. Census Bureau. (2013). Tampa City, Florida: Profile of General Population and Housing Characteristics: 2010. http://factfinder2.census.gov/

Wallerstein, N., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health Promotion Practice,* 7(3), 312-323.

Williams, D. R., Lawrence, J. A., & Davis, B. A. (2019). Racism and health: evidence and needed research. *Annual Review of Public Health*, 40, 105-125.

Woods, N. F., Lentz, M., Mitchell, E., & Oakley, L. D. (1994). Depressed mood and self-esteem in young Asian, black, and white women in America. *Health Care for Women International*, 15(3), 243-262.

Zimmerman, M. A. (2013). Resiliency theory: A strengths-based approach to research and practice for adolescent health. *Health Education & Behavior,* 40, 4, 381-383.