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Research Article

Latinx Community Members' Perspectives on Barriers and Facilitators to Healthy Eating and Active Living: A CBPR Approach to Combat Childhood Obesity

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Abstract

A CBPR approach was used to explore the role of Social Determinants of Health (SDOH) in influencing healthy eating and active living practices among Latinx children, and its impact in the existing disproportionate rate of obesity. The team held nine focus groups with 63 participants including middle and high school students and parents. Data analysis followed a thematic approach using a single coding scheme and NVivo. Results showed that when conceptualizing a healthy child, participants alluded to the child's adequate weight, activity level, eating habits, psychosocial aspects, and familism. Perspectives varied among participants' type regarding weight, activity level, and active lifestyle indicators. Participants emphasized the role of cultural values, health care providers, social networks, and availability and quality of community resources. Findings reflected the relevance of considering differing perspectives, acculturation effects, SDOH, cultural and linguistic modifications, expanding collaborations, and incorporating social networks**.** Results guided development of a community-driven action.

Keywords: Active living; Barriers; Community-based participatory research; Facilitators; Healthy eating; Latinx children and parents; Obesity; Social determinants of health

Introduction

Latinx children will make up approximately 31.9% of United States (U.S.) children by 2060. The most rapid growth of the U.S. Latinx population is occurring in the south, with a 300% increase in South Carolina (SC) in the last decade [1]. Currently, Latinx individuals represent 6% of the SC population and 9% of the Greenville County (GC) population, where this study took place [1]. As the largest minority population, Latinx communities contribute significantly to the overall health profile of the U.S. [2]. In the U.S., race and ethnicity are strongly associated with health and lifespan, primarily through the mechanism of socioeconomic status [3]. As a result, Latinx residents are more likely to experience health inequalities including diabetes and obesity, and unfavorable social determinants of health, including educational or employment opportunities compared to White residents [2,4].

Lower utilization of public health prevention services and reduced access to clinical services are some of the drivers of the inequities experienced by U.S. Latinx individuals in morbidity and mortality rates [2]. Immigrant residents experience cultural and language barriers as well as higher rates of poverty [5]. Threats of deportation among undocumented immigrants may contribute to the underuse and lack of knowledge of services. For example, undocumented parents are less likely to receive food and childcare subsidies or health insurance [6].

Obesity disproportionately affects U.S. Latinx communities [2]. They have the second highest rate of obesity when compared to other racial/ethnic groups [7]. Approximately 26% of U.S. Latinx youth ages 2-19 are obese, more than any other racial/ethnic group [8,9], and in the community (White Horse Road Corridor [WHRC]), who participated in the current study, 44% of Latinx youth are overweight or obese. Prevention and reduction of high rates and inequities by race/ethnicity are important, as obesity is a risk factor to a variety of health problems [2], including long-term chronic diseases [10].

Potential barriers for Latinx youth maintaining a normal weight status include individual, systems, and environmental factors [2]. For instance, a study showed that low-income Latina mothers typically engage in parenting that is more permissive of indulgent diets that correlate with elevated obesity risk [11]. On the other hand, marketing targeted towards Latinx children often encourages foods and beverages that are low in nutritional value and calorically dense [12]. In addition, a lack of accessibility and trust are major barriers to Latinx participation in community and research projects [13]. Thus, this study used a Community Based Participatory Research (CBPR) approach, which can reduce historical mistrust and actively build trust between researchers and study populations by engaging all members as equal partners with relevant and necessary expertise [14,15].

This report presents findings of a CBPR assessment of the facilitators and barriers to healthy eating and active living among middle and high school Latinx children and their parents. We used findings from this study in a stakeholder planning process to identify community-informed interventions. The assessment and planning process were part of a larger community initiative, Build Trust, Build Health (BTBH), created to build a culture of health in Hispanic neighborhoods by building trust, increasing capacity to advocate for personal health and wellness, and improving access to social and environmental opportunities. The research question for this qualitative study was, "What are the perspectives of the White Horse Road Corridor (WHRC) Latinx community members about healthy families and children, facilitators and barriers for healthy eating and active living within their cultural and environmental contexts?"

Materials and Methods

Setting

LiveWell Greenville (LWG), the lead organization for BTBH, is a coalition of more than 200 partners across business, healthcare, government, and non-profit sectors working together to create healthy eating and active living policy, systems, and environments (PSE) change for all children in families in GC, SC. The study was designed and implemented as part of a community-academic partnership between LWG, with the Hispanic Alliance and PASOs as community partners, and Furman University and Clemson University as academic partners. Representatives from the BTBH initiative participated in the study as an advisory board. Approximately 35% of the known Latinx population in GC, live in a 2.5-mile buffer around the WHRC, a 14-mile stretch of highway that runs north to south in the county and is an area of concentrated disadvantage [16].

Community-Based Participatory Research (CBPR) Approach

This study represents a culturally appropriate and community-engaged research approach to address obesity disparities affecting the WHRC Latinx community. We integrated CBPR elements in this project to encourage greater subjective participation and engagement by involving the community members and stakeholders from the study community in the research process. We recruited a group of bilingual Latinas with experience in working with the target population as study team members to increase our capacity to make culturally appropriate interpretations of participants' accounts. As the academic partners, we framed ourselves as facilitators and not experts, allowing participants to take on the roles of educating, sharing, and discovering, thus limiting issues of power imbalance through a co-learning process. We incorporated

five of the nine CBPR principles in our study design, which were depicted in Table 1. The Furman University's IRB approved this study.

CBPR Principles applied	Strategies/Actions
Principle 1, "Acknowledging the community as a unit of identity."	The White Horse Road Corridor Latinx community is our target community. Our efforts pursue acknowledging that this community has importance, and its residents should have their opinions and values heard and honored.
Principle 2, "Build on strengths and resources within the community"	Gathering information about individual and community assets from community members and stakeholders, and to use this information to complete an assets' inventory that would guide the participatory action plan to be developed. By engaging some stakeholders (community mobilizer and PASOs Community Health Workers' [CHWs]) in assisting at different stages of the research process including participants' recruitment, instrument's pilot testing, and data collection. CHWs who participated in a pilot test of the focus group questionnaire provided feedback that informed its refinement. The community mobilizer facilitated three of the nine focus group meetings and was also instrumental in facilitating a virtual modality for the focus group meetings.
Principle 3, "Facilitate collaborative, equitable partnership in all phases of the research"	Developing a planning and implementation process that included all partners in the decision-making process related to research design and analysis.
Principle 4, "Promote co-learning and capacity building among all partners"	All academic and community partners were co-responsible for the study design, implementation and data-analysis at three meeting sessions, through a process that fostered synergy and co-learning for all partners.
Principle 8, "Disseminate findings and knowledge gained to all partners and involving all partners in the dissemination process:"	Sharing study results and collecting participants' input through virtual coalition meetings and community forums for developing a community-engaged action plan.

Table 1: Strategies implemented to incorporate Community-based Participatory Research (CBPR) principles (Israel et al., 2010) to the Build Trust Build Health intervention to address Latinx childhood obesity.

Sample

The team conducted nine focus groups (FGs): three with middle school students (n=21), three with high school students (n=23), and three with parents (n=19). Parent eligibility included being of Latinx origin or descent, 18 years of age or older, and residing in the WHRC. Student eligibility included being of Latinx origin or descent, currently attending middle or high school and residing in the WHRC.

Participant recruitment

The Covid-19 pandemic influenced recruitment methods as the IRB committee did not allow in-person contact. The project's Community Mobilizer (CM) worked with community stakeholders to create a student contact list and contacted the mothers of students to explain the study in more detail and arrange participation. We also distributed a recruitment flyer via text messaging, email, social media, and in person at community food distribution events. The team also used snowball sample recruitment techniques asking participants to text additional individuals about interest in participation.

Data collection procedures

After agreeing to participation, the CM assisted participants with downloading Zoom and demonstrated how to use the platform. The implications of conducting FGs via video conferencing reduced the intended number of FGs from 12 to nine. FGs lasted around

90 minutes and followed a semi-structured FG guide (Table 2), developed based on a review of literature, coalition input, and the research aims. Participants completed an electronic informed consent (parent assent form for students) and a demographic form before participating. We gave participants a virtual $20.00 gift card and the option of participating in English or Spanish. All participants opted to participate in Spanish.

- Please share for how long you have been living in the White Horse Road Corridor area.
- How has COVID-19 influenced your and your family's options for healthy eating? (Probe: Challenges, barriers, knowledge, lifestyle changes, access to resources, information, etc.).
- How has COVID-19 influenced your and your family's options for an active living? (Probe: Challenges, barriers, knowledge, lifestyle changes, access to resources, information, etc.).

From this point forward, please try to answer our questions without taking in consideration the COVID 19 situation. To the best of your ability, try to answer our questions considering your life before the pandemic.

As we move forward, please answer the questions based on the place where you actually live.

- How would you describe a healthy family? (Probe: physical and psychological factors)
- How would you describe a healthy child? (Probe: physical and psychological factors)
- What do you consider overweight is? What is the ideal size for a child?
- How does your country, community or family view a healthy child?
- What aspects make it easier for you to raise a healthy child? (Probe: in home and community)
- What aspects make it harder for you to raise a healthy child? (Probe: in home and community; discrimination)
- What do you consider healthy eating? Which aspects can help you to maintain a healthy eating habit? What aspects make difficult for you to maintain a healthy eating habit? (Probe: at home and in community)
- What do you consider is to have an active live? What aspects can help you to have an active live? What are your main obstacles to maintain an active live? (Probe: at home and in community)
- When you personally have a difficulty, how do you solve it? (Probe: How do you organize yourself to solve it? Do you seek for help? Do you make different plans?)
- How does your family and social circle help you be healthy? What resources do they share?
- What are resources in your community that help people be healthy? Please explain. Do you use these resources? Why or why not?

Table 2: Focus Group Guide.

Data analysis

FG recordings were transcribed verbatim and then translated, locally, by an independent professional prior to the researchers conducting a thematic analysis. We removed identifying information and conducted all analyses in NVivo. Two team members, including the CM, coded the transcripts and analyzed them for potential themes. Four team members then conducted deductive and inductive thematic analysis [17] using a single-coding schema for responses. The team developed consensus on themes using the constant comparison approach.

Results

Student participants were equally distributed by gender, the average age was 16 years (r=11-19), and all participants self-identified as Latino/Hispanic. Participants had lived in the U.S. for an average of 15 years and in the WHRC for an average of 12 years. Although 83% of the students were native to the U.S., only 63% reported it as their country of origin. Students preferred language spoken at home was Spanish (88%) and only 4% reported preferring English and Spanish (Table 3).

Variables	Categories	Students (n=24*)
		Percent (n)
Gender	Female	50 (12)
	Male	50 (12)
Race/Ethnicity	Latino/Hispanic	24 (100)
Country of origin	Mexico	21 (5)
	Nicaragua	8 (2)
	Honduras	8 (2)
	United States	63 (15)
U.S. Born	Yes	83 (20)
	No	17 (4)
Preferred language at home	Spanish	88 (21)
	English	8 (2)
	English/Spanish	4 (1)

Age (Years); Mean=16, Range 11-19; Years lived in the U.S.; Mean=15, Range 6-19; Years lived in the White Horse Road Corridor; Mean=12, Range 1-19; *Only 24 (55%) out of 44 students completed the socio-demographic questionnaire.

Table 3: Demographics for middle and high school focus group participants.

Parent participants were primarily low-income (52% >$19,999), low educational level (58% >high school), and stay at home mothers (47%), who self-identified as Latinx immigrants, primarily from Mexico (63%), and with limited English-speaking proficiency (89%). Fifty-eight percent did not have access to regular medical care, and only 26% had health insurance. Those with insurance had primarily Medicaid (80%) (Table 4).

Variables	Categories	Parents (n=19)
		Percent (n)
Gender	Female	100 (19)
Race/Ethnicity	Latino/Hispanic	100 (19)
Country of Origin	Mexico	63 (12)
	El Salvador/Guatemala/Honduras/USA	37 (9)
US Born	No	89 (17)
Marital Status	Married	74 (14)
Education	Less than High School	58 (11)
	High School graduated or equivalent (GED)	42 (8)
Work Situation	Working full-time	16 (3)
	Stay at home parent	47 (9)

Household Income	Less than $19,999	52 (10)
	More than $40,000	5 (1)
Preferred Language at Home	Spanish	89 (17)
Regular Medical Care	Yes	58 (11)
Health Insurance	Yes	26 (5)
Age (Years); Mean=37, Range 22-51; **Years lived in the White Horse Road Corridor**; Mean=11, Range 2-23		

Table 4: Socio-demographic profile of parents.

Conceptualization of a healthy child. Participants identified behavioral and physical characteristics or processes associated with a healthy child. Most participants included the following concepts: appropriate weight, a child that plays and has fun, an active child, healthy eating, and limited time with electronics. A middle school participant said, *"[a] healthy child, I would say that he doesn't like playing video games so much, he likes to play active games more, physically, not like that."* Behavioral aspects mentioned by participants included, doing productive things, not bullying, and not playing many video games. The psychological/emotional aspects mentioned were feeling safe and happy, reducing stress, a positive mindset, and a high self-esteem. A middle school student said, "*I think that a child who has a good mind is very smart and thinks very positive instead of thinking everything in a very negative way*." A parent said, *"For me, a healthy child must be healthy both emotionally and healthy in body and mind, in everything. That they grow so well, in weight not too chubby, not too short, just as it all depends on you, the food you give them."* Other indicators used by participants to conceptualize a healthy child included doing exercises, mutual care, and familism (*Familismo*) Middle school student, *"[a] child has to work with his family as a team."*

Cultural perspectives or views of a healthy child

Participants noted views of a healthy child differ across countries and cultures, that a child's health is a parent's duty that requires adequate systems and resources. Parents made differentiations between the U.S. and Latin American countries' views of a healthy weight status and healthy behaviors. A parent said, *"What matters to [parents in Latin America] is if they can work, if they can help around the house, if they can cook, this is already what a healthy child is for them …"*. Several participants expressed notions about their, or their relatives, perceptions of a healthy child to be one who is overweight or chubby (*gordito*). One parent said, *"I have three children; all three are very active because I try to keep them active. Two of them are skinny. I am skinny too. The youngest is a little chubby and my mother tells me that he is fine.* A high school student said, *"[j]ust like when, my grandmother came, because I'm thin, she says, "Why don't you eat more? You're not okay."*

Some participants deemed as important the role of health care providers in educating parents about child's health. Parents reported that their child's pediatrician helped them shift their views of what a healthy child is. A parent said, *"I had that tendency for a long time, that changed at some point when I asked the doctor, … I told the doctor that I wanted him to give my children something because they looked very skinny. That's when my concept changed when the doctor told me that he didn't want fat children."* Another important cultural concept was the value of respect (*respeto*) for others and civic behavior to describe what they think a healthy child is, including caring for and keeping their community clean, helping other people, and being respectful. A high school student said that a healthy child is *"…responsible where they live, and they don't throw things away where they live or where they are."* Another concept mentioned was a parent's consideration of their child's mental health and the importance of access to resources and bonding social capital to nurture healthy children. High school students identified that it was important for parents to consider their child's emotions and mental health. One student said *"parents' priorities for children in other places such as Mexico or Latin America are different and they are not worried about things that are not considered, because they simply are not taught for that, or it is not culture. Like depression, such as mental problems or among the family…"*

Table 5 depicts identified themes related with facilitators and barriers to healthy eating and active living, and illustrative quotations derived from the FGs data analysis.

Themes	Codes	Illustrative Quotations
Factors that contribute to active living		
Community resources	Community exercise/gym equipment Courts and places to play.	▪ *"[y]es, there are like gym equipment that is out in the open for the public. I have seen that some people use it, I believe that this is also part of helping the community to be more active*." (high school student)
Behavioral factors	▪ Planned activities (such as, playing, sports, walking, and going to church) ▪ Allocating time for exercising ▪ Reducing alcohol consumption ▪ Eating healthy ▪ Less use of communication technology and social media	▪ *"… a lot of people who suffer from depression, mental health. They start comparing, they start to see things on Instagram and that can affect their spirit, …"* (high school student) ▪ "*… the Hispanic culture many of the men drink beer and sometimes drink excessively and I think that something that can help them is having an education on that beer is very bad for the body, because many of them take it as if it is water…"* (high school student)
Work/life conditions	▪ Having better wages or a minimum wage to have time to be active ▪ Having choices to be active	▪ *"It could be the minimum wage for workers. I suppose that the Hispanic community has gotten used to working a lot, maybe because sometimes you are not well paid or sometimes because their families are large, but if they had the resources, they would have more time to work a little less and give themselves a time to be active."* (high school student)
Factors that hinder active living		
Family	▪ Crowded houses ▪ Size of the household and outdoor spaces	▪ *"the number of people in your house or your family, if you have a large family you cannot be doing all that with all of them, because there are too many people."* ▪ (middle school student)
Personal	▪ Schoolwork ▪ Excessive use of technology ▪ Working and studying ▪ Taking care of children's extracurricular activities ▪ Lack of personal drive/ sadness ▪ Sickness	▪ *"[s]chool also takes a lot of time. Now with school and everything, you have many classes. If in your classes, they want you to read many books and then you must write many papers."* (high school student) ▪ *"…it is work, running to take them to sports, which makes it difficult for me to maintain an active life. You will be running, but I will not be productive because I am driving, I arrive at the fields, I sit down."* (Parent)
Factors that contribute to healthy eating		
Family-household	▪ Drinking plenty of water ▪ Not having sugar beverages and unhealthy food choices at home ▪ Cooking healthy food choices	▪ *"…eat well and always have water in the fridge. We don't have to have so much sugar."* (Parent) ▪ *"…the liquids we consume, because, for example, in the Hispanic community and around the world, soft drinks, Coca-Cola, that is very common, and we forget to drink water …"* (high school student)

Themes	Codes	Illustrative Quotations
Personal	▪ Doing exercises and being active ▪ Taking vitamins ▪ Avoiding fast food restaurants ▪ Not eating junk food ▪ Motivation in preventing health issues	▪ *"It motivates me because I know that in the future, I will not worry about serious health problems."* (high school student) ▪ *"Don't eat so much junk, because later if we eat a lot, we will always want more. If we eat healthier our body will get used to it." (*middle school student)
Resource availability	▪ Having a family garden, ▪ Having a good education on nutrition ▪ Vegetable and fruits boxes sold/donated close to home ▪ Training programs to learn how to cook healthier ▪ Having access to healthy food recipes (Pinterest, YouTube, etc.).	▪ *"[h]ere vegetables are consumed a lot, here in my house because [a church] bring us a lot of vegetables sometimes…"* (Parent) ▪ *"…outside our house, we have a piece of land that we put next to it to plant vegetables. Right now, we have pumpkins, carrots, ..."* (high school student) ▪ *"some adults don't know how to cook healthy, maybe they have customs from their countries, in which they were not taught how to eat from the five groups…"* (high school student)
Factors that hinder healthy eating		
Family environment	▪ Family size ▪ Food presentation techniques ▪ Parents limited healthy eating knowledge ▪ Parents' pressure for children to keep eating ▪ Having unhealthy food in the household	▪ *"…if we think about very healthy foods, maybe our purchase would rise to USD150 or USD175. Perhaps it is an amount in which, some families are larger, do not have it available."* (Parent) ▪ *"I like to eat a lot of snacks, many times my mother, she is always buying, and I am always eating them."* (middle school student)
Contextual	▪ High cost of healthy food options in the area (Food Desert)	▪ *"[m]any times money also has a lot of factor, because a bag of lettuce is more expensive than a sabritas, sometimes a bottle of water is more expensive than a large two-liter soda. …If you want to buy a lot of vegetables ... If you want to buy whole wheat bread, it is much more expensive than white bread..."* (Parent)
Organiza-tional	• Language barriers • School food choices	• *"…many of those who are here always make a great effort to learn the language, which I have done, but one of the things is the language, because we find some books or some information somewhere, but it is not in our language and we do not fully understand it."* (Parent)

Themes	Codes	Illustrative Quotations
Personal	▪ Personal eating preferences ▪ Lack of time to prepare foods ▪ Lacking motivation/ sadness ▪ Low educational level ▪ Substance abuse ▪ Technology overuse	▪ *"[s]ometimes you are at work all day, because sometimes one works about 10 to 13, 14 hours a day, sometimes… one stops and grabs McDonald's, the Chick-fil-A, whatever, whatever you have on the way."* (high school student) ▪ *"[y]es, I thought it could be a bigger one, the lack of education, the culture you live in and the priorities. I can explain it, lack of education is that nobody taught them what is to eat healthy or how to eat healthy, and it is hard to get out of a bad habit...."* (high school student)

Table 5: Themes, codes, and illustrative quotations identified in the focus groups' data analysis.

Conceptualization of active living

Most participants mentioned that exercising, routine, playing, community volunteerism, working hard, walking, limiting electronics and sedentary behavior, and other activities at or near home or school reflects active living. A middle school student said, *"…going outside, doing sports, walking. So, we can maintain a healthy life."* Similarly, a high school student said, *"I go to the gym to do weights, I go hiking, I do many things, I rock climb, I do a lot of swimming. Many things, there are many things that can be done, go to the field for a run, to the park for a run."* A middle school student reinforced the importance of establishing routines saying, *"Having a routine can help us, because if you have a routine, you know what you are going to do next, and it helps you to be more active."* Participants identified schools as settings to promote active living. A middle school student said. Regarding use of electronics, a high school student said an active person, *"…is not addicted to a telephone, a screen, a television or something."* Some participants mentioned the importance of not being sedentary. For example, a middle school student said, *"…not just staying at home doing nothing, that is not good for us, because when we are at home, we just watch TV."*

Factors that contribute to active living

Participants were asked to identify factors that help them in having an active life. We grouped these aspects intro three categories including:

Community resources: Participants identified exercise/gym equipment, courts, and places to play as factors that influence active living.

Behavioral factors: Participants identified allocating time for exercise, avoiding social media stereotypes, reducing alcohol consumption, and eating healthy as factors that influence active living. Participants also identified limited use of technology and alcohol consumption were identified by students as factors that promote active living.

Work and life conditions: Participants identified obtaining better wages to have time to be active, as well as having choices to be active as important factors to promote active living.

Factors or barriers that hinder active living

Participants identified the following personal and family related factors that hinder active living:

Family related factors: Participants identified crowded housing, household size, and outdoors space as barriers to active living.

Personal related factors: Participants identified schoolwork, excessive use of technologies, working and studying, children's extracurricular activities, lack of personal drive/sadness, and sickness as barriers to active living. High school students identified the intersection of mental health/emotional issues with physical heath as a barrier to active living.

Conceptualization of healthy eating

Participants described having a balanced diet, eating on time, and moderation as healthy eating habits. A high school participant said, "*A healthy diet, it is a balance, not always eating all the vegetables all the time, but it is a balance for the body, giving it what it needs*." Some of the types of food mentioned by participants as descriptors of having a healthy eating habit included few or no carbs, soda, fried/oily foods, or junk food as well as plenty of salads, vegetables, and fruits, and eating variety from the food pyramid groups. One high school participant said, *"I think that a healthy diet is eating from the food pyramid groups, of fruits, vegetables, whole green products and that."*

Factors that contribute to healthy eating

Participants' responses to healthy eating were categorized as family-household, personal, and resource availability related factors.

Family-household related factors: Participants identified drinking plenty of water, not having sugar beverages and unhealthy

foods at home and cooking healthy foods choices as contributors to healthy eating.

Personal related factors: Doing exercising/being active, taking vitamins, avoiding fast food and junk food, and a desire to prevent health issues were identified by participants as important contributors to healthy eating.

Resource availability related factors: Participants identified family gardens, a good education, produce boxes sold/donated close to home, healthy cooking classes, and healthy food recipes at home (e.g., Pinterest, YouTube, Google, etc.) as contributors to healthy eating. One of the resources, mentioned by several participants, was the possibility of conveniently buying or obtaining produce close to where they live.

Factors that hinder healthy eating

Participants identified factors that hinder their choices and opportunities for maintaining healthy eating habits, that we grouped into four categories described below:

Family environment related factors: Participants identified family size, food presentation techniques, parents limited healthy eating knowledge, parents' pressure for children to keep eating, and having unhealthy food in the household. Parents' pressure for children to keep eating after being satisfied was another relevant factor mentioned by participants.

Contextual factors: High cost of healthy food options in the area (food desert) as a factor that makes challenging to keep a healthy eating habit as per participants' accounts.

Organizational related factors: Participants mentioned that language barriers and school food choices act as deterrents to healthy eating; and doing exercises as a motivation to eat healthier**.**

Personal factors: Factors identified by participants included personal eating preferences, lack of time to prepare foods, lacking motivation/sadness, low educational level, substance abuse, and technology overuse were identified as factors that influence healthy eating**.** Excessive alcohol consumption was also identified as a factor that hinders healthy eating, in addition to tobacco and controlled substances.

Social Networks' support for eating healthier and staying active

We explored the role of social networks in encouraging and motivating a person to eat healthier and be active**.** Participants identified parents, siblings, and other relatives and friends as people who motivate them to eat healthier and be active. Some participants alluded to the negative influence some relatives had such as pressuring them to make unhealthy food choices. A participant said, *"[s]ometimes when I want… my friends to go outside, I send them pictures of, "Oh my God, it's a very nice day, why don't you go outside?"* Playing and doing sports with, as well as receiving advice from relatives and friends were mentioned as motivators to stay active. A middle school student said, *"[s]ometimes when I go to my aunt's house, as my aunt has many children, they always want to play with me, with my cousin, as we are the same age, we play soccer or something when I'm there with him and stuff."* The role of parents in providing support and encouragement for their children to eat healthy and be active was identified by participants including a parent's caring attitude, parents' encouragement to exercise, and parents' modeling behaviors. Conversely, some participants also mentioned relatives and friends could exert a negative influence by expecting and encouraging them to eat foods they consider unhealthy at parties and family reunions. A middle school student said, *"[w]hen we are with the whole family we eat things that are not healthy."*

COVID-19 pandemic influence on healthy eating and active living

The COVID-19 pandemic dramatically changed the daily life of families across the globe. Participants' experiences differed, with some reporting they have not experienced any changes in routines, others that they are engaging in healthier behaviors than before the pandemic. As it relates to healthy eating a parent said, "*…we learned how to cook a little healthier and we eat more fruits with the pandemic."* Some participants reported being less active during the pandemic, particularly at the beginning, while others reported being more active by making adaptations to occupy their time and using spaces and resources creatively including you tube videos or varying their schedule to avoid crowds. Reasons mentioned for a reduction in physical activity were anxiety, gym, and activity space closures, and not attending school in person. A parent said, "*We were affected a lot, with being overweight, I began to see that my child ate a lot, they got fat. We could not go out also, but just sitting, playing, you get stressed at home, indoors..."*

Discussion

This research offers insights into the perceptions of healthy eating and active living among a group of low-income, primarily Spanish-speaking, parents and students using CBPR practices along with culturally and linguistically relevant qualitative methods. The present study addresses a gap in the literature about Latinx parent-child dyads and their influence on healthy eating and active living practices [18]. It contributes to the literature on perspectives and knowledge of both parents and children, providing a more complete picture of the dynamics influencing healthy eating and active living in Latinx households. Further research elucidating the role of family and community environments in the context of acculturation is important in addressing youth obesity disparities by race/ethnicity, particularly among Latinx youth [2,4].

Overall, parents focused on an adequate weight. Whereas students focused on physical activity including avoiding sedentary behaviors and working with the family as important factors. Participants also identified psychosocial aspects (e.g., feels happy, less stress, positive mindset, and high self-esteem) of a healthy child, reflecting they have a holistic perspective of health. A good relationship with the family and respectful children were important aspects of a healthy child identified, reflecting Latinx families' cultural values of familism and respect. Research has consistently showed familism as having an impact on a community's health because persons who report high familial beliefs are more likely to reproduce healthy behaviors [19,20].

Participants alluded to the difference of the views on a healthy child between Latin-American residents and U.S. Latinx, alluding that the first are more likely to value chubbiness. This is consistent with previous findings of the Latinx concept of a fat (*gordito)* child as a happy, healthy child [21] and Latinx parents less likely to recognize their child as overweight compared to White parents [22,23]. One potential avenue identified by participants to address this difference in perception of a healthy weight status is the role of health care providers in educating Latinx mothers about healthy weights and habits for their children. This perception is consistent with previous findings about the important role of physician conversations with Latinx parents about the importance of heathy eating and obesity risk [18]. Participants also identified access to resources and social support (i.e., bonding social capital) as important to raising healthy children. Like previous studies [24,25], students mentioned the important role of schools in providing access to healthy food for Latinx youth. Student participants referred to the importance of avoiding screen time including video games and social media to stay active. Social media use has been found to be associated with increased sedentary behavior and consumption of junk foods [26]; therefore, screen time interventions represent a potential source of obesity prevention in this population. Participants also mentioned the important of routines for physical activity as well as doing activities around the home as a family, which is supported by previous research on the importance of having strong family and community relationships to promote active living among underrepresented groups [27]. Participants also talked about the importance of having community resources such as gym equipment, courts, and places to play for them to stay active, as well as the impact that living in a small and crowded house has in their possibilities to stay active while at home. This is relevant considering that the role of place and housing conditions in promoting healthy behaviors has been well-established in the research literature [28].

Previous research findings showed that Latinx families participating had an incomplete knowledge regarding healthy eating [18]. Among our three types of participants, high school students incorporated more nutritional concepts in their responses as compared to middle school students and parents, potentially reflecting the important role schools have in educating on healthy eating. It also reflects the relevance of multi-sector collaborations and alliances to adapt systems and the environment to promote culturally relevant and healthier eating habits, particularly among underrepresented communities and communities of color [28,29].

Participants listed several resources and strategies to promote healthier eating habits at home, including having a family garden, which has been identified as a healthier eating promoting strategy in previous research [30]. In addition, participants stressed the importance of available community resources such as vegetable and fruits boxes conveniently sold or donated close to home and having more businesses that sell healthy food choices for the families within the neighborhood [28,31]. Participant parents requested access to culturally and linguistically relevant education on topics such as food presentation techniques and healthy eating knowledge as to counteract negative family environment related factors such as pressure for children to keep eating and having unhealthy food in the household. Of importance is educating parents on how to model healthy habits considering that parental modeling influences children's habits [18,32], as well as receiving guidance from reputable and trusted sources. The importance of healthy eating highlighted by parents in this study contrasts with other findings that low-income Latinx mothers tend to be more permissive of indulgent diets that promote obesity [18].

The role of social networks in supporting participants on eating healthier and staying active was stressed. Participants mentioned they value when friends encourage one another to engage in outdoor activities [31]. However, a potential negative impact of social networks' support was expressed by parents and students when they said some relatives can pressure them to eat unhealthy food choices at family gatherings. This social network pressure effect has been documented in previous research [18,33], and it is particularly relevant among Latinx families considering the role that cultural values such as familism play shaping eating and other behaviors [34].

Some of the study limitations included that we could not stratify our findings by immigration status because we did not ask about it to reduce participant concerns of safety. The use of virtual FGs due to the Covid-19 pandemic might have limited our study sample to those who had access to internet and supporting technology. It is also possible that proximity to parents or other family members during FGs might have influenced participants' responses. Lastly, we used a convenience sample from a specific community. While this increases representativeness of the local voice, it potentially limits generalizability to other communities.

Conclusion

This study helped us in understanding the perspectives of the WHRC Latinx community members on healthy families and children, facilitators and barriers for healthy eating and active living within their cultural and environmental contexts. The incorporation of some CBPR principles in the study design and implementation phases was key to ensure an active participation of the target community, as well as to promote community engagement in the participatory action planning process. Findings of this study contribute to the availability of research that considers the knowledge and perspectives of the parent-child dyad about healthy eating and active living. Overall, participants reflected a holistic perspective of health through expressing the value of psychosocial aspects, their emphasis on the cultural values of familism and respect, the relevant role of health care providers, and the social network pressure effect, which are all consistent with previous findings. The availability of community systems and resources was thought to be a key determinant of both an active lifestyle and healthy eating habits, such as sufficient space, exercise equipment, family gardens, convenient produce access, and more businesses that sell healthy foods. Culturally and linguistically relevant resources were found to be important for this Latinx population. Our data supports the notion that the views on a healthy child vary between cultural backgrounds, considering the prevalent Latinx communities' positive association between heavier weight and happiness. Collaborations among multiple sectors and systems is considered key to promote these healthy habits among underrepresented communities, especially with the involvement of trusted and reputable sources such as schools and pediatricians.

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Authors' Contributions

AMP and SC designed and implemented the study and drafted the manuscript. MF, RR, and DA provided advice on the study design and supported implementation; VR coordinated recruitment and assisted with data collection and analysis. NC Reviewed the manuscript and assisted with data analysis. All authors have read and approved the final manuscript

Ethics Approval and Consent to Participate

Ethical approval was granted by the Furman University's IRB (15/5/2020). Information about research was provided to the participating middle/high school students and parents. Prior written consent was obtained from the involved participants before collecting the data. All identifiable information was recorded confidentially and will not be disclosed to any party other than the research team.

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