



Understanding Cultural Perceptions of Health in Female Adolescents for Obesity Prevention: A Case Study

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Abstract

The purpose of this study was to understand acculturation and race/ethnicity influences in the home and school environment that affect physical activity and nutrition in female adolescents attending middle school. A convenience sample of eight female adolescents ($n = 2$ Asian American, $n = 2$ Black, $n = 2$ Latinx/Hispanic, and $n = 2$ White) was interviewed individually via Zoom. Responses regarding acculturation, physical activity, and nutrition in the home and school environment were analyzed using qualitative case study analysis. Three themes were identified: 1) experiences related to home, health, and culture, 2) the intersection between school meals and personal culture, and 3) the intersection between school physical activity and personal culture. Study findings can inform policies on school nutrition and physical activity and lead to opportunities for students and families to collaborate with schools to improve adolescent health.

Keywords: *middle school students, adolescents, females, physical activity, nutrition*

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Introduction

Chronic diseases are responsible for 70% of deaths in the United States each year (Centers for Disease Control

and Prevention, n.d.). Disparities exist between race/ethnicities; individuals from minoritized backgrounds are 1.5 to two times more likely than White people to have major chronic diseases (Price et al., 2013). Developing healthy habits to prevent chronic disease is crucial, particularly in adolescence. Researchers have demonstrated that dietary intake habits at age 13 predict dietary intake habits in early adulthood (Cruz, et al., 2018). Winpenny et al. (2018) found in a longitudinal study that fruit and vegetable intake declined from ages 14 through 23 before it increased at age 30. Physical activity has been shown to track moderately from adolescence to young adulthood (Hayes et al., 2019). Early adolescence is an important time for the development of lasting health behaviors, and because there are documented ethnic/racial disparities in chronic diseases, research is needed regarding the experiences of diverse youth around diet and physical activity behaviors. The current exploratory case study was designed to understand the cultural experiences surrounding home and school-related health behaviors (i.e., school meals, physical activity) among Latina, Asian American, Black, and White middle school females.

Theoretical Framework

The socioecological model (SEM) can help explain health behaviors in adolescence, including diet and physical activity (McLeroy et al., 1988). Multiple overlapping systems comprise the SEM, including individual, relationship, community, and societal systems, which influence each other and health behaviors. Youth attending school may vary in individual factors (such as race, ethnicity, and gender) and cultural factors (such as low or high representation of their ethnic group within their school and community), which can result in different experiences and opinions related to health behaviors within the school context. To understand the cultural experiences around adolescents' home and school health contexts (i.e., school meals and physical activity), it is essential to consider how multiple systems might contribute to these experiences.

Literature Review

Individual factors such as demographics (age, gender), language skills, knowledge, and attitudes can influence dietary and physical activity behaviors (McLeroy et al., 1988). Gender differences exist among these behaviors. For example, male adolescents are more likely than female adolescents to participate in physical activity; in the United States, 33.4% of male adolescents participated in daily physical activity compared to female adolescents at 16.9% (de Looze et al., 2019). Cultural factors can influence healthy behaviors as well. Acculturation is defined as “the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups” (Berry, 2017, p. 698). Young children who immigrated to the United States adopt the unhealthy habits of the host country more quickly than children who immigrated at an older age, primarily because of low exposure to their home culture (Zhang et al., 2019). We find mixed results when examining the relationship between acculturation and dietary and physical activity habits, particularly among adolescents. A systematic review indicates that the English language (a proxy for acculturation) is negatively correlated with obesity in Asian/Pacific Islander groups and low-income Latinx populations (Zhang et al., 2019), indicating that individuals who assimilate into Western culture have a higher prevalence of obesity compared to those who remain true to their culture.

Interpersonal relationships also affect dietary intake and physical activity habits. Parents' opinions and ideals of physical activity and nutrition may shape their children's perspectives. Parental consumption of foods they perceive to be healthy or unhealthy is positively correlated with their children's consumption of those foods (Mahmood et al., 2021). Another study determined that lower family income, lower family functioning score, maternal age, and single-parent family households were associated with higher unhealthy diets (Appannah et al., 2021). One study determined that parental physical activity and sedentary behaviors were significantly correlated with children's behaviors (Carson et al., 2020). In a systematic review, researchers found a positive

relationship between parent and child physical activity (Petersen et al., 2020). Another review determined that a parent component is important for childhood obesity prevention and treatment outcomes (Tomayko et al., 2021). Minoritized ethnic groups also reported spending less time participating in physical activity due to a lack of familial resources, lack of knowledge about preparing commonly consumed fruits and vegetables in the United States, knowing how to cook, and lack of familiarity with engaging in physical activity properly (Arcan et al., 2018; Meng et al., 2018). Vasquez and Schuler (2020) found that parents' cultural background affects physical activity behaviors, in that Hispanic adolescents of foreign-born caregivers had significantly lower physical activity rates. Qualitative interview results published by Beck et al. (2019) indicated that low-income Latinx adolescents had gaps in nutrition knowledge and that families often undermined healthy eating efforts by purchasing high-calorie, low-nutrient food.

Community environments also contribute to healthy behaviors. Children spend the majority of their day in a school setting, compared to an average of 3 hours per day with their parents (Genadek & Hill, 2017). While schools offer opportunities to engage in healthy behaviors (e.g., physical education [PE] and school meals) these opportunities may cater to White American culture and could create additional barriers for students not identifying with that culture (Arlinghaus & Stang, 2021). There is also stigma among certain groups; some minoritized ethnic groups believe that school lunches are unhealthy and should be avoided (Arcan et al., 2018). If schools can identify the barriers to physical activity and diet specific to minoritized students, the disparity in chronic disease outcomes for these groups could be reduced.

Purpose of the Study

The purpose of this qualitative case study was to understand perspectives related to home and school environments and cultural background and their influences on overall health, nutrition, and physical activity behaviors of ethnically and racially diverse adolescent females. The research question that guided the study was: How do female adolescents from a racially and ethnically diverse sample describe experiences at home and in school relative to diet and nutrition?

Methods

Participants and Recruitment

Participants were recruited through a larger survey that sampled students from several states (Vo et al., 2023). From the larger survey, participants were asked if they would be willing to participate in an in-depth interview and were contacted to schedule an interview time. Further sampling occurred through reaching out to youth organizations in Florida and Minnesota and asking them to share the research opportunity (i.e., to participate in an in-depth interview). These organizations connected potential participants by with a member of the research team. In total, eight female participants ages 11-14 attending school in the United States were interviewed. Parental consent was obtained before the start of the interviews, as was child assent. Participants identified as Asian American ($n = 2$), Black/African American ($n = 2$), Hispanic/Latina ($n = 2$), and White ($n = 2$). Institutional Review Board approval was obtained through the sponsoring institution.

Instruments

The semi-structured interview guide was created based on previous research (Vo et al., 2022) and included 19 questions about general health, nutrition, and physical activity, as well as the culture at home and at school. Depending on the participants' responses, interviewers probed the participants with additional questions for depth and clarification.

Data Collection

A qualitative case study design was employed. This strategy can be used when there are “how” and “why” questions regarding a phenomenon within its real-world context (Yin, 2014). This was appropriate for the current study because the focus was on “how” and “why” cultural responsiveness is or is not evidenced in meals and physical activities within a school context. The “case” in this instance was students in public middle schools in the United States. Case study research is strengthened when there are several data sources from the case (Yin, 2014), and this case study included data from eight early-adolescent perspectives. After participants volunteered to be interviewed, they were matched with an interviewer of the same race to increase comfortability. An interview was scheduled at the participant’s convenience and conducted via Zoom (www.zoom.us). The interviews were conducted between April 2021 and November 2021 and took no more than one hour each. Interview data were transcribed verbatim and deidentified.

Data Analysis

Qualitative case study analysis procedures were implemented (Yin, 2014), which included creating case descriptions for each participant and word tables, and then themes were identified (Vaterlaus et al., 2018). First, four researchers independently immersed themselves in the data and then met together to agree on a format to write consistent case descriptions. Thereafter, one researcher wrote eight case descriptions and a second researcher checked for accuracy. Consistent with Yin (2014), to examine commonalities and differences across the participants, the four researchers then reviewed the case descriptions, looking for key ideas and words and determining uniform categories (like *codes* in other qualitative approaches). Seventeen uniform categories were agreed upon, and then word tables for each uniform category were created by one researcher (e.g., all information regarding perceived school meal cultural strengths was organized into one table, by participant). A second researcher then checked for accuracy. Finally, consistent with the analytic approach, four researchers reviewed the word tables, met together, and organized the uniform categories into three themes that accurately represented the participants’ experiences.

Results

Three themes were identified through qualitative case study analysis. First, participants shared their experiences related to their home, health, and culture. Second, participants elaborated on the intersection of school meals and personal culture. Finally, participants shared their experiences at the intersection of school physical activity and personal culture. Participant pseudonyms are included to provide context throughout the results section and to align with demographic characteristics in Table 1.

Table 1. Participant Self-Reported Demographic Characteristics

Pseudonym	Race/Ethnicity	Gender	Age	Location in U.S.	Parent an immigrant to United States*?
Christina	Asian/Filipina American	female	11–14	Philadelphia, PA	
Inaya	Asian/Indian American	female	11–14	Minneapolis, MN	Yes
Jasmine	Black and White/African American	female	11–14	Austin, TX	
Gabrielle	Black and White/African American	female	11–14	Los Angeles, CA	
Emily	White/American	female	11–14	Palm Beach, FL	
Hannah	White/German American	female	11v14	West Palm Beach, FL	Yes

Sofia	Hispanic/Latina/Colombian/ Guatemalan	female	11–14	Orlando, FL	Yes
Alexandra	Hispanic/Latina/Chilean American	female	11–14	West Palm Beach, FL	

Note. *Participants reported if one or both of their parents was a first-generation immigrant to the United States.

Home, Health, and Culture

When defining health, participants used words like “active,” “balanced diet,” “feeling good,” and “exercising regularly.” All participants mentioned physical activity as a centerpiece for health (e.g., working out, playing sports, or participating in low-impact activities such as walking), and all but one (Emily) explained that health is achieved through a diet that consists of fruits and/or vegetables and low sugar consumption. Definitions of health also included “sleeping well” (Inaya, Jasmine, and Gabrielle); being able to perform activities of daily living (Inaya); mental wellness (e.g., “feeling good about yourself”—Hannah) and happiness (Inaya, Emily, and Hannah). Alexandra, Hannah, and Sofia included hygiene and body composition as a measure of health but explained, “how your body looks” is not always indicative of one’s health and that paying too much attention to physical appearances can have a negative effect on one’s self-esteem.

In terms of personal health, all the participants alluded to healthy habits they participated in involving nutrition and physical activity. Friends and peers were key relationships in promoting health because the participants engaged in physical activity with them. When evaluating peer health, participants were quick to claim their peers were healthy because of participating in sports and having a healthy appearance, but were cautious about determining if their peers were unhealthy, as most decided that looks were not a valid indicator of health.

Participants believed their families played a larger role in supporting their health than peers. All of the youth evaluated their families as being healthy, based on their self-reported criteria for judging health (e.g., “I think my family is pretty healthy”—Jasmine). Participants acknowledged that there was heterogeneity of health practices within their families (e.g., “We all try to be healthy in some sort of way; we all have different strategies”—Alexandra). Some family members focused more on physical activity, while others were more conscious of their nutritional habits. Limiting screen time and social media use were also mentioned as methods of achieving health. The participants explained that their individual health was closely tied to their family relationships, as they “eat food together,” exercised together, and had conversations about health risks in families (e.g., family history of diabetes). Youth explained that parents and/or grandparents modeled healthy behaviors and supported their emotional wellness (e.g., “We’re very close!”—Jasmine).

An important element of participants’ personal and family lives was their ethnic cultures (e.g., “holidays,” “beliefs,” ways of living, cuisine, family relations, and country of family heritage). All agreed that it was “interesting” and “fun” to learn about cultures, both their own and those of their peers and that it was important to acknowledge heterogeneity between and within the “variety of cultures.” Participants showed appreciation for the traditions and values of their ethnic cultures, but half of the participants did not assert whether their ethnic culture had an impact on their daily lives. All the youth attributed their health habits to the traditions of their families, specifically their parents’ beliefs about healthy practices. They discussed eating dishes that were typical within their ethnic culture that their families have prepared and eaten “generation after generation.” When it came to physical activity, there was more diversity of cultural influences. Alexandra and Jasmine discussed the influence of their cities/neighborhoods in addition to their ethnic cultures, while Christina and Gabrielle did not believe that culture, in general, impacted their physical activities. Inaya, Hannah, and Sofia reported that culture does impact the physical activity of other people who share their same race or ethnicity, especially the generations of their parents and above, but that it did not have as much of an effect on the younger generation.

Intersection of School Meals and Personal Culture

Participants acknowledged that diet was a key part of personal health and explained their school meal practices. Most participants (Alexandra, Christina, Emily, Hannah, and Sofia) relied on school-prepared lunches because they were more “convenient” than bringing a packed lunch from home. Beyond convenience, some participants opted for school meals because of the “variety of options” provided (Christina and Emily) or because they are free or affordable (Alexandra and Christina). Participants explained that school meals typically included “American” foods, which were perceived to be “fast foods” like “pancakes, hamburgers, sandwiches, and pizza” (Gabrielle). Christina added that while her school forced students to choose fruits and vegetables to eat with their meals, they were often presented in an unappetizing way, so many students ended up throwing away that portion of the meal. By contrast, some participants (Alexandra, Christina, Inaya, and Jasmine) stated that their school cafeteria occasionally featured a culturally representative meal for a holiday (e.g. “Chinese-themed meal for Chinese New Year” (Inaya) or by request of the students (e.g., “enchiladas,” “Jamaican patties”).

There were some participants (Alexandra, Gabrielle, and Inaya) who either exclusively brought lunches from home or wished they were able to bring their lunch from home. Alexandra preferred to bring lunches from home but was unable to because her family had low economic resources, and she stated she did not own a lunchbox. Participants Inaya and Gabrielle explained that their parents sent lunches from home for cultural and health reasons. There was a concern that school meals were “prepackaged,” “fast-food,” and “reheated several times.” Sending food from home allowed for culturally relevant foods (e.g., Indian cuisine) to be eaten “fresh,” which was perceived to be a healthier option. All participants who had a recent immigrant parent (see Table 1) reported that their parents perceived school meals to be less healthful than meals prepared at home.

All the youth concluded that there was an opportunity to improve cultural inclusivity in school meals and believed that doing so would lead to positive outcomes. The primary focus was that serving “American” foods prevented variety. Having more cultural representation in school meals served might improve health outcomes because students would have more food options to choose from. This would not have to be every day, but including more culturally varied options more often was thought to be a way to lead to initial improvement. This was also considered a way to increase school lunch participation for those who do not typically consume Western or American foods and who may be more comfortable eating foods like those they eat at home.

Participants reflected on their peers’ possible reactions to having more culturally representative school meals. Some felt their peers would see the inclusion of meals from their personal culture as unfamiliar (e.g., Hispanic dishes), too healthy (e.g., no processed food), weird (e.g., outside of their cultural experience), or maybe undesirable (e.g., vegetarian meals). On the other hand, some participants (Christina and Emily) reported that their peers come from “all different cultures” and are already eating a variety of foods from many cultures or are “not always [eating meals] from their [own] culture.” They reported these peers would be open to trying new foods through school meals. While the collective idea was that more cultural representation would be positive in school meals, Jasmine explained that it was difficult to predict how peers would respond, because, “It would be weird to just ask them about [culture and food] out of the blue.” Inaya had been completing school remotely because of the pandemic and was not currently eating meals with peers.

Intersection of School Physical Activity and Personal Culture

Most of the students had an overall positive experience with physical education (PE) in their schools. It should be noted that most indicated at the time of the interviews that the pandemic had significantly altered PE, sports, and clubs (e.g., online PE classes, only activities that allowed for physical distancing, activities limited because of building closures such as pools and gyms). Still, participants reported on pre-pandemic and current experiences with school-facilitated physical activity.

There were mixed perceptions regarding diverse cultural representation in school-related physical activity. Some participants (Inaya, Hannah, Emily, and Alexandra) believed that there were already a variety of activities and sports represented in these offerings or that instructors were open and responsive to student suggestions. For instance, Inaya stated that her school taught, “a wide variety of activities that [she] can see many countries around the world would play” even with limitations of “equipment and space.” Further, Emily shared that a classmate showed “the class a sport they did in their culture,” and it was played often in PE class that year.

In contrast, participants Christina, Jasmine, Gabrielle, and Sofia stated that their PE classes were not culturally inclusive and lacked variety overall. While others acknowledged that there was some evidence of cultural inclusivity, they noted there was room for improvement (Alexandra, Inaya, Emily).

Participants perceived that offering a variety of sports that encompassed many cultures and ethnicities in school physical activity would better engage student participation, because they would learn about activities that were new to them. They also stated that some students may feel more included if a sport they were more familiar with was represented, (e.g., “their [culturally valued] activities are also being taught and having value held to them” (Inaya), and students who usually did not engage in physical activity might find a sport they enjoy. While there was some difference in perceptions of cultural inclusivity in school-related physical activity, the participants believed that having and enhancing cultural representation through a mix of team sports and individual activities would be positive for all students.

Discussion

Consistent with the socioecological model (McLeroy et al., 1988), participants in the present study recognized that their health decisions and beliefs were influenced by peer and family relationships, culture, and socioeconomic factors, such as income and community environment. Ryan et al. (2022) recognized the complex interplay between home and school environments—their qualitative results indicated that adolescents are shaped by their social environment and heavily influenced by the food choices of their peers, whereas parents often dictate the food culture and choices at home. In the present study, when asked about ethnic foods at school, all participants expressed that introducing a variety of ethnic foods to school cafeterias would be beneficial to them or their peers. Schools are uniquely positioned to expose students to new foods. For example, in a small intervention study in Spain, researchers concluded that when students were involved in choosing recipes, purchasing ingredients, and being involved in the food preparation, their selection and consumption of green vegetables increased (Maiz et al., 2021).

Participants in the present study who seemed to be less aware of their personal culture did not find culture to be a major factor that contributed to their health. The participants who were able to describe in detail some type of culture they identified with (e.g., race, ethnicity, nationality, or city) believed that the culture influenced their physical activity and nutrition habits. Participants whose parents were recent immigrants to the United States all observed that school meal options were less nutritious than the foods they typically ate at home, which is similar to findings in a previous study that identified Somali, Latino, and Hmong primary caregivers perceiving school meals as unhealthy (Arcan et al., 2018).

Regarding physical activity and nutrition, participants reported that their PE classes focused mostly on games or sports. They reported that there was less emphasis placed on functional fitness and that their PE classes rarely focused on different sports from a variety of cultures. Some participants also discussed that school meals catered primarily to the Western diet. Participants mentioned that any initiatives to improve culturally and ethnically inclusive physical activities and meal options were mainly led by student actions. Patton et al. (2016) found that peer influence on health and well-being during adolescence is greater than at any other age. Previous studies have demonstrated that peer-led initiatives are successful in improving obesity prevention

and physical activity (McHale et al., 2022; Nguyen et al., 2022), thus demonstrating how peers can influence the school environment. Some participants suggested that including a variety of activities in PE classes and serving ethnically diverse meals could improve engagement and help students develop healthy lifestyle habits.

While most participants in this study did not discuss specifically any difficulties with sensitivities related to culture and school, other research has determined that there may be challenges in schools related to making the spaces more inclusive. Alexander et al. (2022) posit that ethnic minority students may be further marginalized, given limited access to resources that may contribute to the prevention of chronic disease. Progress toward diversified school meals and PE requires a collaborative effort of school administration, faculty, students, and families, but this approach can yield positive results. For instance, in one study, including meals from ethnic cultures different from what are typically served and providing vegetarian options and other less familiar foods resulted in decreased food waste and higher school meal consumption (Patton et al., 2016). DeJesus et al. (2019) found that children expect “outgroup” members to make more unconventional food choices; thus the opportunity to normalize a variety of foods exists in schools. Schools should consider the social determinants of health, including race, ethnicity, and generational status, that may contribute to adolescent health.

Limitations

The recruitment method and sample were appropriate for an exploratory study, but the results may not be representative of all adolescent experiences across the United States. The study relied on only adolescent perspectives, and having parent, peer, and school personnel perspectives might provide a broader understanding of cultural influences related to adolescent school meals and PE. Additionally, the recruitment methods used may also have created limitations. For example, convenience sampling does not allow us to make inferences from the sample to the population. Yet, because the study aimed to be exploratory in nature and used qualitative analysis, the methodology was appropriate for these purposes. Future research could consider parent, peer, and school personnel perspectives, as well as utilize more robust research methods than a convenience sample.

Conclusions

The results from this study have the potential to inform policies involving school meals and PE. For example, schools could incorporate a variety of ethnically diverse foods in school meals and offer more options for sports and physical activity participation as ways to increase cultural awareness for all students. In this effort, schools should solicit students and families to suggest options for meals and PE that are familiar and culturally important to them. Identifying patterns in health perceptions and barriers to making healthy lifestyle choices can inform schools as to what culturally responsive changes can be made to school meals and PE to promote improved health outcomes for students.

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