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Original Research

The National School Lunch Program in Rural Appalachian Tennessee – or Why Implementation of the Healthy, Hunger Free Kids Act of 2010 was Met with Challenges: A Brief Report

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Abstract

Purpose: The purpose of this study was to investigate challenges faced by high schools in rural Appalachia in implementing the Healthy, Hunger Free Kids Act of 2010 (HHFKA). **Methodology:** We used qualitative, secondary analysis to analyze a collection of thirteen focus groups and 22 interviews conducted in 2013-14 among parents, teachers, and high school students in six counties in rural Appalachian Tennessee (n=98). **Results:** Five basic themes were identified during the thematic analysis: poor food quality prior to implementation of the HHFKA school nutrition reforms; students' preference for low-nutrient energy-dense foods; low acceptance of healthier options after implementation of the HHFKA school nutrition reforms; HHFKA school nutrition reforms not tailored to unique needs of under-resourced communities; and students opting out of the National School Lunch Program after implementation of the HHFKA school nutrition reforms. Rural communities face multiple and intersecting challenges in implementing the HHFKA school nutrition reforms. **Conclusion:** As a result, schools in rural Appalachia may be less likely to derive benefits from these reforms. The ability of rural schools to take advantage of school nutrition reforms to improve student health may depend largely on factors unique to each community or school.

Keywords: Appalachia; Rural; School nutrition reform; Qualitative secondary analysis

Abbreviations

HHFKA: Healthy, Hunger Free Kids Act; NSLP: National School Lunch Program; QSA: Qualitative Secondary Analysis.

Introduction

Rural Appalachia faces a disproportionate burden of childhood obesity [1,2] and lower rates of fruit and vegetable consumption among children [3], compared with the U.S. The National School Lunch Program (NSLP) plays an integral role in promoting healthy nutrition in schools in this region [4-6]. Amid growing concerns over the prevalence of childhood obesity in the U.S., the United States Department of Agriculture updated the NSLP nutrition standards [7]. The first phase occurred in 2006 with the requirement that schools develop wellness policies to promote student health through focus on physical activity and nutrition. Then in 2012, the Healthy, Hunger-Free Kids Act of 2010 (HHFKA) was implemented [8]. The primary goal of this act was to enhance the nutritional quality of foods offered through the NSLP [9] by limiting caloric intake, portion size, and saturated fats and increasing consumption of fruits, vegetables, and whole grains [9-11].

Policy approaches, such as these, represent an important step towards addressing obesity and inadequate fruit and

vegetable intake among children in rural Appalachia. Yet, rural schools face unique challenges affecting their ability to implement school nutrition reform [12-15] in terms of fiscal and personnel constraints [16,17] remote location [17] and a less healthy food environment, compared with metropolitan schools [18-20].

According to Asada et al. [21] research among rural, socioeconomically disadvantaged populations is needed to elucidate contextual factors that may impact school nutrition reform.

Aim

The current study aims to fill this gap in the literature by conducting a qualitative secondary analysis (QSA) to explore challenges faced by high schools in rural Appalachia in implementing the HHFKA school nutrition reforms.

Materials and Methods

We used QSA to analyze a collection of thirteen focus groups and 22 interviews from the Boundaries and Bridges to Adolescent Obesity Prevention: Identifying Parental Engagement Strategies in High Schools in Southern Appalachia project, a qualitative study conducted in 2013-14 among parents, teachers, and high school students in six

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counties in rural Appalachian Tennessee.

The focus groups and interviews were collected by experienced research staff using semi-structured interview techniques to identify factors contributing to adolescent obesity and the role of parents and schools in moderating risk. Participants were asked to discuss barriers and supports to physical activity and healthy eating in the home, school, and community. Probing questions were used to explore topics in further depth. For example, when asked about barriers and supports to healthy eating within the school, the interviewer used prompts or probes to elicit additional information about the NSLP if necessary [22]. Primary analysis subsequently revealed that challenges implementing the HHFKA school nutrition reforms was an important theme that warranted further investigation. As investigators on the original study, we were well positioned to return to the dataset and perform QSA to investigate this emerging theme [23,24].

Participant recruitment

Purposive sampling techniques were used to recruit participants [22,25]. Parents and teachers were recruited in high schools in five counties participating in the Team Up for Healthy Living project (control arm), a cluster-randomized clinical trial of a cross-peer obesity prevention program among adolescents in rural Appalachia [26].

To avoid biasing results among adolescents in the Team Up project, we recruited students from two high schools in a separate county in the region not currently participating in the project. Recruitment methods included distributing flyers at school-related events (e.g., parent-teacher conferences, school athletic events, school fairs, after-school programs, and community outreach events for low-income families) attended by the research staff and electronic invitation using email distribution lists obtained from school principals.

Data collection

Data collection methods were semi-structured focus groups and interviews [27]. Parents, teachers, and students participated in separate sessions to ensure group homogeneity [22]. Sessions lasted approximately 30 to 45 minutes and were led by a trained research staff. Participants received an honorarium at the conclusion of the sessions. Parental consent and child assent were obtained prior to study enrollment. A total of 39 parents, 38 teachers, and 21 students participated in the study. The study was approved by the Institutional Review Board at East Tennessee State University (IRB# c0713.18s).

Data analysis

First, we read the 35 transcripts collected in the primary study [21]. Second, we re-read those transcripts to enhance our familiarity with the data [28]. Lastly, we used Thematic Network Analysis [29] to analyze the transcripts. The basic steps of this analysis include coding the material, identifying themes, constructing thematic networks, describing the thematic networks, and interpreting the findings within the context of the study purpose. The three (TD, JS, NW) analysts met regularly to discuss, review, and reach consensus

throughout the QSA and to develop a clear audit trail between the raw data and development of codes and themes. Parent, teacher, and student datasets were analyzed separately prior to a cross-comparative analysis to generate the thematic network. A similar approach has been used elsewhere [30,31]. Other details about participant recruitment and characteristics and methods used to enhance trustworthiness in the primary study are reported elsewhere (manuscript under review).

Results

Participants discussed a range of issues related to challenges implementing the HHFKA school nutrition reforms. These findings are summarized into five basic themes (Table 1).

Poor food quality prior to implementation of the HHFKA school nutrition reforms

Prior to implementation of the HHFKA school nutrition reforms, several participants stated that foods served during lunch were healthier than a decade ago, with more baked, whole wheat, and low-fat food options available. Yet, most participants described the food as unhealthy, low quality, and unsatisfactory in taste, texture, and appearance. A teacher described a typical lunch meal as consisting of “bread, mashed potatoes, and fried chicken nuggets”. Many participants stated there was limited access to fresh foods and typically “everything is heated up out of a can”. Pizza was a favorite among students; however, the pizza being served was not prepared healthy: “It’s like a waterfall of grease”.

Students’ preference for low-nutrient energy-dense foods

The majority of participants felt that students simply prefer low-nutrient energy-dense foods because these foods are familiar to them and are more widely available at home and school (e.g., vending machines or a la carte items). One parent stated: “She don’t like school lunch. So when she comes home she eats stuff like lasagna, mashed potatoes, corn”. Teachers and students expressed similar concerns. Many students felt that the new changes to the school lunch menu were “pushing them [sic] to go to McDonald’s®,” where they could eat hamburgers and fries.

Low acceptance of the healthier food options after implementation of the HHFKA school nutrition reforms

Many participants (primarily teachers) acknowledged that schools were doing the best they could to prepare lunches according to the new HHFKA meal standards. However, students expressed dislike of the new foods being served and referred to them as unpalatable, “not food at all,” at all and “not real meat”. Another stated “They try to feed us healthy, no they’re trying to kill us”. Parents and teachers who had eaten in the cafeteria also said the food was not very palatable. Words commonly associated with foods served at lunch included: terrible, awful, and unappealing.

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HHFKA school nutrition reforms not tailored to unique needs of under-resourced communities

Several parents felt the HHFKA meal standards focused on “weight loss rather than nutrition”. Many teachers and students echoed these comments. Portion sizes were too small and fewer options were available, outcomes of the HHFKA school nutrition reforms. One parent had this to say about portion size: “You’ve got grown kids here. That might be okay for kindergarteners, but when they get older they gotta have a little more. And they just don’t provide them enough”. Another parent stated: “Mine are starved to death when they get home from eating regular lunch.” Some students felt they had “no choice” in terms of foods offered during lunch. Several items had been eliminated; but students were most frustrated over elimination of salad bars; although, some schools continued to offer pre-made salads.

Participants also argued that the HHFKA school nutrition reforms used a “one-size fits all” approach and therefore, failed to account for the unique needs of students and communities. Food insecurity among students was a primary concern for most participants. Participants mentioned several times that school lunch may be the child’s only meal. These two parent quotes highlight the seriousness of the issue in the region:

“This is the only place they get it [meals] and then they get here and there’s not enough. There’s not enough for somebody that does get it at home”.

“When that’s their only meal and then they’ve cut, reduced the food to almost half of what it used to be. The kitchen, they noticed the kids and how tired they would act and how hungry and they even say that they knew that some of the kids are hungry but they didn’t take food because the food wasn’t any good”.

Participants were also concerned that the new HHFKA meal standards did not account for differences in the caloric needs of students. They listed several reasons why students may need more calories during the school day: activity level, gender, age, body composition, and after-school activities.

At a community level, participants believed rural schools experienced greater burden in terms of implementing the HHFKA school nutrition reforms than urban schools in the region. Parents and teachers who had attended countywide school meetings learned that students in nearby urban schools had a greater selection of options to choose from during lunch. These options had been served in the past and were both appealing and palatable to students (e.g., fruit yogurt cups, and peanut butter and jelly sandwiches). Since rural schools had fewer resources in terms of personnel and finances, they would not derive the same benefits from the HHFKA reforms as urban schools in the region.

Students opting out of the NSLP after implementation of the HHFKA school nutrition reforms

Participants believed that roll out of the HHFKA school nutrition reforms had resulted in a noticeable drop in student participation in the NSLP. More students chose not to eat at school, while others chose to pack their lunch. One parent

who worked at a high school noted: “There’s not many students that eat lunch here anymore.” Another parent: “My daughter...she’s always ate the school lunch...She doesn’t eat this year.” Most students participating in the study did not eat school lunch; rather they waited until they arrived home. In some cases, but not all, lack of participation corresponded with roll out of the new nutrition standards. This quote from a student provides context for the issue: “The taste of the food is so bad that the people don’t eat it. So when they go home they raid the cabinets, the refrigerators, even the sink. Anything, anywhere they find food.” Students in the focus groups also provided two other explanations for lack of participation in the NSLP. According to them, some students have always brought a packed lunch and other students simply will not eat food served in the school cafeteria because they do not like it.

Discussion

This represents one of the first studies to assess challenges faced by high schools in rural Appalachia in implementing the HHFKA school nutrition reforms. Five basic themes were identified in the analysis: poor food quality prior to implementation of the HHFKA school nutrition reforms; students’ preference for low-nutrient energy-dense foods; low acceptance of healthier options after implementation of the HHFKA school nutrition reforms; HHFKA school nutrition reforms not tailored to unique needs of under-resourced communities; and students opting out of the National School Lunch Program after implementation of HHFKA school nutrition reforms.

Similar findings have been reported elsewhere [32,33]. For example, school food administrators across the U.S. have cited operational challenges implementing the HHFKA school nutrition reforms including cost, food preparation, staff training, participation, plate waste and preference [16,34,35]. Rural schools, in particular, have observed increased plate waste, declining NSLP participation and more student complaints post-implementation [16,33]. Nevertheless, findings to date are inconsistent [16,28,32-34,36,38] perhaps because of factors unique to each community or school.

The Special Nutrition Program Operations Study (SN-OPS) is a multi-year external evaluation of outcomes resulting from implementation of the HHFKA of 2010. Authorized by the USDA, this report collected data from a nationally representative sample of state-level and local school food directors across the U.S. [35]. Findings from our study are similar to findings from the 2013-14 SN-OPS data collection period. According to the SN-OPS report, more than half of schools reported “very” or “extreme” operational challenges in 2013-14 in terms of plate waste, participation, and acceptance of healthier options by students, parents, and staff [35].

In response to these particular findings, the USDA initiated a process to modify milk, whole grains, and sodium requirements. The goal of these modifications is multifaceted: 1) ease implementation burden on school food administrators; 2) provide greater local autonomy among schools to serve healthy meals that are appealing to students; and 3) provide additional technical assistance to school food administrators

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[35,40,41]. The final rule, which is set to be published mid-2018 and then rolled out in the schools [42], will provide

opportunities for additional research in this area.

Table 1: Selected quotes from study participants.

Basic Theme	Parents	Teachers	Students
Poor food quality prior to implementation of the HHFKA school nutrition reforms	I'm not a fan of school lunches... They're not healthful at all. It's the poorest quality food I think you could possibly offer them.	The other day they had bread, mashed potatoes, and fried chicken nuggets. I mean high carbs.	I don't care if they serve healthy food or not. I just want them to serve real food. The corn should not be swimming in grease and taste disgusting.
Students' preference for low-nutrient energy-dense foods	Cheese, milk, bread, junk, cookies, that's where my buggy goes... We've just been trained, right?	They want their drug. Their drug is bad food. They want their junk.	I eat the snack machine. That's where I go.
Low acceptance of healthier options after implementation of the HHFKA school nutrition reforms	Tasteless, doesn't have any flavor. Tastes like straw.	If you would see what is served in the lunch line.	They make us eat that nasty wheat bread and our chicken ain't even chicken.
HHFKA school nutrition reforms not tailored to unique needs of under-resourced communities	I went to one meeting and I suggest have a peanut butter sandwich I mean that'd be better... I know the city school offers that and I said why can't the county?	There's something wrong. There's an obesity problem but you know you can't just cut off the portions to just you know happy meal size.	I think they give you such small portions if you actually want to eat actual food and not be hungry the rest of the day you have to get junk food out of the snack machine.
Students opting out of the National School Lunch Program after implementation of the HHFKA school nutrition reforms	My kids hate it... Our participation in school lunch has went way own.	But see they're losing money. Like they're in the red bad. Yeah, because kids aren't eating it.	I wait until I get home because half of the time the food is nasty.

Conclusion

Rural communities face multiple and intersecting challenges in implementing school nutrition reforms. The ability of rural schools to take advantage of school nutrition reforms to improve student health may depend largely on factors unique to each community or school. As a result, schools in rural Appalachia may be less likely to derive benefits from these reforms. Our findings, together with the literature, support the view that contextual factors are key considerations when developing school nutrition reforms in rural Appalachia [21,43].

Limitations

A major criticism of QSA is concern regarding the fit between the primary study and secondary analysis [23]. As

investigators on the original research project, we could assess 'fit' based on our familiarity with the primary data and the context in which it was collected [44]. Secondly, while the emergence of the topic "challenges implementing school nutrition reform" in the primary study is a noteworthy consideration, further research may be warranted to deepen our understanding of the conclusions drawn in the secondary analysis [45]. This limitation may have been partially addressed through use of semi-structured schedules in the primary study which are more likely to produce rich, nuanced datasets compatible with secondary analysis [23].

Lastly, researchers undertaking secondary analysis have no control over the selection of participants, thus potentially limiting depth of understanding on an issue [46]. In the primary study, recruitment efforts targeted groups of individuals who could provide information-rich insights. These efforts yielded a multi-group, multi-county sample of individuals (n=98) who were impacted directly by the school nutrition reforms.

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