

# Childhood Obesity: Teaching Children Healthy Habits in Rural Communities

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## **Childhood Obesity: Teaching Children Healthy Habits in Rural Communities**

### **Abstract**

In rural communities throughout the United States childhood obesity rates are significantly higher than suburban and urban communities. Rural communities are often located in food deserts, meaning they have limited access to fresh and healthy food. Therefore, rural children often may rely on nutritional programs at schools to provide them with balanced meals. Through physical activity, rural schools have been shown to reduce obesogenic behavior in students. However, improvements relating to diet were inconclusive. Rural schools face unique difficulties associated with their location when running strong nutritional meal programs. Staffing and administrative shortages lead to weak or often no leadership. Scare food suppliers and extra delivery costs cause shortages of fresh foods. Higher meal costs per student require schools to turn to advertisements of unhealthy foods to cover costs. These issues combined mean rural schools cannot implement the nutritional standards placed upon them by local and federal governments.

## **Introduction**

Rates of childhood obesity in the United States have risen consistently since the 1970's (RWJF, 2019). Obesity is known to disproportionately impact children from socially and economically disadvantaged communities, like those in rural areas (Johnson et al., 2014). Recent studies have found that rural children are 26% more likely to be obese than urban children (Robinson et al., 2019). This risk of obesity during childhood is dangerous because it increases the risk for a variety of medical issues later in life, including type 2 diabetes, cardiovascular disease, and multiple types of cancers. Children who attend rural schools and live in rural areas are more likely to become obese and experience these future issues than urban children due to restricted access to fresh foods and a lack of strong nutritional programs in schools. To address and further explore the issue of nutrition in rural schools, a comprehensive literature review is performed.

For the purposes of this paper rural is defined as an area that is more than 25 miles from an urbanized area (NCES, 2006). About 20 percent of the US population lives in these rural areas, so this is not an insignificant portion of the country. Rural school districts alone serve around 20 percent of students and make up half of public-school districts in the United States. Due to their remote location, rural school districts are often disadvantaged in a variety of unique ways compared to more urban schools. They are often characterized by a lower socioeconomic status, have less diversity, and cover a larger land area than suburban or urban school districts (Johnson et al., 2014). Thanks to a lower average teaching salary, of about \$50,770 in 2017, they also generally have less administrative capacity and are consistently in need of trained staff. For comparison, the average teaching salary for suburban schools in 2017 was \$62,820 (NCES, 2012). These issues are setbacks for rural schools to enact change of all kinds, but specifically to keep up with and implement changing nutritional standards (Hoffman, 2018).

Nutrition has not always been so heavily emphasized in schools. The first federally mandated nutritional standards for school lunches were not implemented until the National School Lunch Act of 1946. These were simple standards that required protein, vegetables, and whole grains to be present in meals (Kessler, 2013). More recently, under the Obama administration, Congress expanded nutritional standards with the Healthy, Hunger Free Kids Act of 2010. This act provided much more detailed standards than those of the past as they now include recommended portion sizes and restrictions of sodium and fats (Rude, 2016). This increase in school nutrition-related legislation was likely implemented as a response to the rising rates of childhood obesity in the United States since the 1970's.

Nutrition is specifically important in rural schools as these districts are often located in areas designated as food deserts. A food desert is defined as an area with a limited supply or restricted access to fresh and affordable foods. Rural individuals often must drive miles to the nearest town for a grocery store and instead may rely on convenience stores, like gas stations with limited fresh options, for their shopping (RHHub, 2022). Food insecurity at home further emphasizes the need for a strong nutritional program in schools. Ensuring these students receive nutritious and well-balanced options at school is a top priority and a possible method to reduce childhood obesity in rural areas.

### **School's Effect on Children's Health**

Nutrition in schools has become a highly popular topic of research in the search for a possible remedy to the childhood obesity problem in the United States. It has been shown that rural school children displayed healthier behavior on the days they attended school than on weekends or non-school days, indicating that school has a positive effect on children's health. It was concluded that when children did not attend school there was an increase in obesogenic

behavior, even if they attended an activity like a day camp or sports practice instead. Obesogenic behavior can be described as reduced physical activity, increased screen time, and increased sedentary time. Children reported an average of 16 more minutes of physical activity and 68 less minutes of sedentary time on school days. The primary difference between a school day and either a non-school day or a day with another activity is the amount of structure school provides for the length of the whole day. Other activities, like camps or sports, typically only provide structure for a few hours of the day, leaving more time for obesogenic behavior (Brazendale et al., 2021).

As this research shows, rural schools do an adequate job combating obesity through increased physical activity. Structured time for activity, through gym classes and recess, helps to reduce sedentary and screen time for students. However, school seems to have little to no effect on rural children's diets, as students reported mixed results on school versus non-school days. Children did report consumption of less fast food and salty snacks on school days. However, they also reported consuming less fruit on these days, demonstrating a need for improvement of rural students' school diets. (Brazendale et al., 2021). As stated earlier, many rural school districts are located within food deserts, which can explain the little variation in diet between school and non-school days. Schools have just as difficult of a task of securing fresh food as parents do due to their remote location. While obesity rates can be improved by increased physical activity, changes in diet have been shown to be more effective at reducing body fat (Kawahara, 2020). This further emphasizes a need to focus nutrition improvement efforts on schools to ensure children have access to well-balanced and healthy meals they may not be able to get at home.

## **Nutritional Programs in Schools**

One reason rural children continue to experience disproportionate obesity rates is because rural school systems face unique difficulties when creating these nutritional programs.

Specifically, administrators of rural school districts have reported issues with hiring staff in general but especially staff with nutritional qualifications. In a study done at Arkansas State University, administrators from rural districts in Pennsylvania, New York, and Tennessee were surveyed on the challenges they faced in their roles. Administrators from all three states reported that they felt as though they had to be a “jack of all trades” to accomplish all they were responsible for. Often a rural school district will only have one true administrator, the superintendent, and this individual usually must fulfil a variety of other roles outside what an administrator might be trained for (Lamkin, 2006). A large administrative capacity is important for the tasks associated with a strong nutritional program, like creating menus and handling the purchasing and accounting for food. In many rural districts, a single administrator handles all these tasks, whereas in a suburban or city school district they may have an entire team or office dedicated to the same role. In extreme cases, a rural school district may not have a school nutrition manager at all, or one would handle nutritional programs for multiple school districts at once. However, these extreme circumstances are more commonly found in smaller rural school districts, like those with less than 2,500 students (Hoffman, 2018).

As previously stated, a lower average yearly salary is likely a strong contributing factor to staffing and administrative shortages. There is little to no incentive for new staff to come work in a rural district when they will be paid less than other urban areas. According to Hoffman’s 2018 study on the challenges of operating a rural school meal program, increasing salaries, and adding health insurance benefits helped to attract more highly trained candidates (Hoffman,

2018). However, increasing salaries is not possible for most school districts, who may already experience budgetary constraints. More practical solutions to increase nutrition related staff includes promoting school nutrition within the community to attract local attention, creating training programs to teach pre-existing staff about nutrition, and creating relationships with state universities and colleges to supply low-cost or free labor (Hoffman, 2018) (Empower Schools, 2022).

In addition to staffing issues, rural schools also suffer a general lack of food suppliers and operational infrastructure due to their remote location. School administrators often struggle to find vendors to serve them at an affordable price due to their low enrollment and increased associated delivery costs. For these food vendors, it is often not worth it at all to contract with these districts. Typically, vendors only travel the distance to the schools once a week, or even once a month to deliver food. This limits the amount of fresh food that can be delivered because schools must figure out how to keep the food from going bad until the next delivery. This a particularly difficult challenge since rural schools are usually built to accommodate fewer students; therefore, they lack adequate storage infrastructure for these bulk deliveries of food (The Pew Charitable Trust, 2017).

These storage and delivery problems cumulate into one major issue: rural schools have a higher per-student meal cost than more urban schools. They are unable to achieve the more efficient economies that city or suburban schools do. These more urban schools have higher enrollments and are located closer to food vendors, so they are easier customers to serve (Johnson, et al., 2014). Moreover, rural schools are often not properly supplemented by state or federal funds and therefore cannot make up for these higher costs. Most of the funding offered is per-student based, meaning rural schools receive less than city or suburban schools. While they

may have less students to serve, they also have higher per-student meal costs, so funding is still inadequate (Yettick et. al, 2014).

In recent years, federal grants have risen as a popular way to receive funding. However, to win these grants districts must have a certain number of students and must demonstrate how the money if received would provide a large-scale impact. Rural districts are often too small to meet the minimum size requirements to even apply for most grants. Furthermore, their impacts are often considered too small compared to larger schools' districts when competing for the same grants (Yettick et. al, 2014). Without proper funding to begin with, and the inability to win extra funding, rural schools are placed within a unique financial situation. They are forced to find other ways to cut costs, raise money, or run their schools within a severely constrained budget.

### **Environmental Effect on Children's Diet in Schools**

Aside from the actual food being served, nutritional programs also are responsible for providing a healthy environment for students. This can be described as an environment with little availability of low-nutrient energy-dense (LNED) foods like soft-drinks, chips, and fruit-flavored juices. Additionally, a healthier environment also requires frequent implementation of healthy eating strategies, and no advertisements or marketing of LNED foods (Nanney et al., 2013). As food advertisements have gradually risen in schools, the role of LNED food marketing has been a highly researched topic.

Food marketing, or the advertisement of food items or brands, takes on a variety of forms in schools. Examples include posters, vending machine exteriors, fundraisers, or school discount nights at restaurants. Anyone who attended public school in the United States was likely exposed to food marketing in one or more of these forms. In 2009 alone, the food industry spent \$149



million solely on advertising in schools. In recent years researchers have attempted to learn how food marketing can play a role in how we make the choice of what to eat. Research has specifically been focused on how this marketing effects children because their cognitive development is not yet complete. Cognition is what allows us to recognize and see through the persuasive attempts of advertisements. Therefore, it can be argued that marketing unhealthy food to children is unfair, as it exploits their lack of cognitive development, and they are more likely to view the advertisements as fact. Due this, children are more likely to let advertising influence what they choose to eat (Smith, 2019). This means that in a school environment unhealthy food advertising can cause children to choose unhealthy food options at school meals.

When rural school officials were surveyed on how their schools provided healthier environments for their students, they were found to generally promote a less healthy environment than city or suburban schools. Specifically, when surveyed on the presence of LNEED foods in their schools, they were found to be in greater prevalence than in city or suburban schools. Similarly, rural schools were less likely to have bans on LNEED food advertising and were less likely to enforce healthy eating policies (Nanney et al., 2013).

Survey results can be traced back to rural schools' lack of access to fresh and healthy foods. Since this leaves the schools with little choice in what they can serve, it can explain the higher prevalence of LNEED foods found. It has also previously been mentioned that rural schools tend to be smaller and lack adequate storage space, like refrigerators and freezers, to keep the foods fresh when they are delivered so infrequently. LNEED foods are likely more prevalent in rural schools because these foods can be stored at room temperature and don't require special infrastructure (The Pew Charitable Trust, 2017). The higher prevalence of LNEED food advertisements can likely be explained by rural school districts' need for funding to support their

meal programs. As previously mentioned, rural schools experience a higher per-student meal cost and often struggle to receive extra funding due to their small student population (Johnson, et al., 2014). For these reasons, rural schools may be more likely to accept advertising money from whoever they can, even if the company advertises an unhealthy food option.

This study also emphasizes an important issue: even when subjected to the same state and federal legislature, rural schools still provided an unhealthier environment for their students than city schools (Nanney et al., 2013). While nutritional policies may be required, rural schools may lack the resources necessary to uphold and enforce these policies. For example, when the Healthy, Hunger-Free Kids Act of 2010 passed, rural food service directors across the country described the regulations as challenging and burdensome to implement. Aside from student attitudes, they cited issues with implementation involving monetary concerns and scarcity of food options that would satisfy requirements (Cornish et al., 2016). What this study has made clear is that these schools cannot enforce policies that require a certain number of servings of fruits and vegetables if they do not have an adequate supply of these foods. Another possible reason for the policy enforcement disparity is that rural school officials may be unaware of the policies and expectations placed upon them. Due to their remote location, they may be far removed from state and federal politics in terms of both attending events and general familiarity with their officials. The reverse is also likely as state and federal officials may also be unaware of the issues faced by rural schools because of their lack of proximity to them.

This study on the disparities in healthy food policies, demonstrates how rural schools are often left out of the conversation when it comes to passing legislation. State and federal governments frequently release standards that are impossible for rural schools to implement. While they likely hope this will motivate change in schools, it actually has the reverse effect.

Rural schools, or any school for that matter, cannot implement and enforce a policy that they do not have the resources to follow. This can easily be prevented by keeping rural schools' needs and issues part of the conversation when creating policy (Nanney et al., 2013). It should be ensured that rural school districts are properly represented within their state governments. It is likely rural schools are overlooked because they are assumed to be a small and insignificant population by officials (Parks, 2021). While they may not be a majority, rural schools do serve 20 percent of America's students. This is surely a significant population of children who do not deserve to have their health and wellbeing overlooked by policymakers.

## **Conclusion**

A lack of fresh foods in rural schools can be a paradoxical concept to those unaware. If these are the communities that grow our country's supply of food, why can't they get access themselves? The answer to this question is complex and lies within a combination of issues relating to staffing, food vendors, and funding. Rural schools face trained staff shortages causing them to lack the administrative capacity required to properly run a nutritional program. They also experience a higher per-student meal cost and have limited access to fresh foods due to an inefficient food vending and delivery economy. Finally, they provide students with an unhealthier environment because they are unable to meet and enforce nutritional standards placed by state and federal governments.

All these barriers have one possible solution in common: rural schools need greater attention from their authorities. If rural schools were given assistance and extra help from state and federal governments, many of these issues could be solved. For example, food vendors could be regulated by state governments so they couldn't charge schools above a certain amount for

food. They could also be supplementally funded to cover the extra delivery costs. Through these efforts rural schools may be able to gain more access to more fresh foods while remaining within their budget.

Another area where more attention from authorities would be beneficial is in rural schools' attempt to receive funding through grant applications. Rural schools often cannot even apply for grants because they are so small, and when they can they rarely win out against the large impacts of city school districts. Having a section of grants specifically available for rural schools with lower minimum size requirements would even out the playing field. Money from grants ideally could be used to supplement the high per-student meal cost or pay for the salaries of additional administrators to assist with running the school lunch programs.

As demonstrated, rural school districts face a variety of unique problems associated with their location when trying to build and improve a nutritional health program. Staffing shortages, increased costs, and lack of infrastructure are all major issues that rural school districts may not be able to solve on their own. Rural schools are also already doing their part to provide students with structure and increased physical activity, both proven to reduce obesogenic behavior. Yet they are still lacking in their ability to provide children with an adequate and nutritious diet, which has been shown to be the biggest factor in preventing and reducing obesity in children. Improvement efforts should be focused on schools, and designed specifically for the issues rural schools face, because they are often unique and overlooked issues. If this kind of outside help were received it could drive the change in lifestyle necessary to see childhood obesity rates begin to drop for the first time in decades.

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