

## PHYSICAL ACTIVITY WITHIN RURAL FAMILIES OF OVERWEIGHT PRESCHOOL CHILDREN: A PILOT

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### ABSTRACT

The purpose of this descriptive qualitative research was to explore physical activity patterns of families of overweight preschool children aged 3 to 5 years living in a predominantly rural agricultural state. This paper presents the second part of a dually focused study related to healthy eating and physical activity (PA) in this selected population. Methodology used was a focus group discussion with 10 parents of overweight preschool children aged 3 to 5 years. Transcripts were coded and analyzed for emergent themes using NVivo qualitative analysis software. The findings revealed that all parents were not engaging in any healthy structured PA beyond their daily functioning actions and were not involved in organized sports; however, they had some knowledge of the significance of PA and its benefits for themselves and their children. Also, the parental participants' perceptions that the children were active (busy with their own play) and their weights were acceptable (as compared to other children) probably influenced their lack of recognition for the necessity of healthy structured PA. They did identify personal and environmental barriers to engaging in PA. The results provide significant implications for health professionals in planning/developing educational materials for PA interventions, enhancing motivation for PA of rural populations and working towards the reduction of barriers through policy and relevant resource acquisition. Continued research with this population could inform health care providers about more culturally appropriate ways to increase motivation to do and effective environments for physical activity within a rural population.

### INTRODUCTION

Childhood obesity is one of the most multifaceted health problems currently challenging the nation, with serious medical and financial implications for the future (Finkelstein et al., 2004). Being overweight in childhood has been linked to an increased risk for cardiovascular disease, hypertension, cancer, sleep problems, orthopedic disease, and obesity in their adult years (World Health Organization, 1997). In addition, the connection between overweight children and type 2 diabetes is apparent (Young-Hyman & Schlundt, 2001). Since early obesity has adult adverse health consequences, intervention aimed at early childhood prevention is a high priority. Recognition of the increasing overweight status of children has prompted the need to identify factors associated with this trend. It seems certain that besides unhealthy eating patterns an increase of childhood obesity has coincided with a lack of physical activity (United States Department of Health and Human Services, 2000); physical activity levels among children are progressively decreasing, and the prevalence of obesity in children is escalating. A Midwest study comparing rural youth to a national sample revealed that rural youth were less active than urban youth (Paxton, Estabrooks, & Dzewaltowski, 2004). Prevalence of overweight was also higher among rural children than ones from urban areas (Joens-Matre, Welk, Calabro, Russell, Nicklay, & Hensley, 2008). A review of research on rural–urban differences pointed that the higher

prevalence of obesity in rural areas may be attributed to the lower socioeconomic status (SES) of rural populations (Wang, 2001). The association between this demographic variable and obesity prevalence; however, needs to be further researched. Promoting physical activity in young children may be a promising intervention for preventing obesity thus, improving the prognosis of their health status as adults.

There is strong evidence that physical activity contributes to a healthy lifestyle, prevents obesity (Chakravarthy & Booth, 2004), plays a key role on body fat morphology, and contributes to the social and mental wellness of young children (Logstrup, 2001). Furthermore, a recent study suggests that high levels of physical activity beginning in the preschool years may delay the onset of the period of rapidly increasing body fat that generally occurs between the ages of 4 and 6 years (Moore et al., 2003). The decline in everyday activity, outdoor sports, and the ubiquitous accessibility of computers, (including computer games, internet and chat rooms) coupled with increased television viewing have all been linked to an increase in obesity among children (Steinbeck, 2001). In addition, children who become overweight during the preschool period are at particular risk for obesity throughout childhood (Nader et al., 2006). Therefore it appears to be critical to establish an active lifestyle early in childhood since these patterns of physical activity are retained from childhood through adolescence and beyond (Moore, et al., 2003).

Parents and primary caregivers are a key influence on children's physical activity behaviors. Children may not be inclined to participate in physical activity if their parents are not modeling physically active lifestyles (Davison et al., 2003). Given this, it is essential to gain an understanding of what are the patterns of physical activity in the families of overweight preschool children. Historically, little information has been available regarding physical activity patterns in these families. The purpose of this study is to explore the physical activity patterns of families with overweight preschool children aged 3 to 5 years living in a predominantly rural agricultural state. Understanding the patterns of and motivation for PA in these families helps to establish better health care education and interventions that could lead to healthier lifestyles for the whole family and alter unhealthy patterns of limited physical activities in obese preschool children.

## METHODS

### *Research Design and Participants*

The research design is qualitative descriptive since the intent was to explore the perceptions held by parents related to their physical activity patterns. The qualitative descriptive design keeps a researcher close to the data collected and does not require a highly interpretive process such as the creation of models or other abstract presentations of data (Sandelowski, 2000). Thus in the reporting of findings one stays close to the words used by participants yet is able to move towards a beginning level of abstraction. Some data is also presented in a simple descriptive numerical presentation (e.g. demographics and BMIs).

Data collection methods included a focus group discussion and a family demographic survey. A focus group discussion guided by Krueger and Casey (2000) methodology was conducted by requesting parents to describe the physical activity patterns of their family which included overweight preschool child/children between 3 to 5 years of age. Eligible participants included parents, either mother or father who lives with an overweight preschool child aged between 3 to 5 years (Body Mass Index (BMI)  $\geq$  85th percentile). The parents spoke English and provided written consent for participation in the study.

The focus group consisted of 10 biological parents, eight mothers and two fathers. The mean age of the parents was 30 (range 25-35). Table 1 summarizes the participants' demographic characteristics. All lived within a 50-mile radius of a small northern plains city/town with a population of approximately 97,000 (U.S. Census Bureau, 2006). The mean age of the ten children

Table 1  
The Characteristics of Parents and Children

	<b>Parents (n = 10) number (%)</b>		<b>Children (n = 10) number (%)</b>
<b>Gender:</b>		<b>Gender:</b>	
Mother	n = 8 (80)	Girl	n = 3 (30)
Father	n = 2 (20)	Boy	n = 7 (70)
<b>Age (years):</b>		<b>Age (years):</b>	
25-29	n = 4 (40)	3 – <4	n = 2 (20)
30-35	n = 6 (60)	4 – 5	n = 8 (80)
<b>BMI:</b>		<b>BMI:</b>	
Normal	n = 2 (20)	Overweight	n = 8 (80)
Overweight	n = 8 (80)	Obesity	n = 2 (20)
<b>Education:</b>		<b>Education:</b>	
High school	n = 1 (10)	Day care	n = 9 (90)
College	n = 7 (70)	Home	n = 1 (10)
Professional degree	n = 2 (20)		
<b>Employment status:</b>			
Full time	n = 7 (70)		
Part time	n = 2 (20)		
Unemployed	n = 1 (10)		

was four (range 3-5). Seven children were boys. One child was cared for in the home while all the other children attended day care (four were enrolled in the local Head Start, and five were enrolled in different private day care agencies). The children who enrolled in the local Head Start participated in arranged activities approximately 50 minutes (min.) each day. These included 1) music and movement for 10 to 15 min., 2) indoor gym four of the five days for 20 min., 3) “hall way” activity (ride tricycle or free walk/run) 20 min. or outdoor playground (only in the summer for 30 min). No information about the activity of the children enrolled in other day care agencies was accessible.

## *Procedure*

Following approval by the university institutional review board, 10 parents of overweight preschool children were recruited through newspaper and public postings. Interested parents telephoned for the time and place of the focus group meeting; eligibility screening was conducted during these phone conversations. Informed consent and permission to tape record the session were obtained from the parents prior to beginning the focus group discussion in a public but private setting to maintain confidentiality. Height and weight of the children and their parents were measured using standardized procedures by two trained research assistants. Height of children and their parents were measured, to the nearest 0.1 centimeters (cm), using a measuring tape fixed on the wall, with each participant standing with shoes off, feet together and flat on the floor with his/her back straight. Weight was measured, to the nearest 100 grams (0.25 pounds [lb]), using a manual medical scale. Weight was measured with each participant standing with shoes off, no outer layers of clothing, and no other items that could add weight such as hat, belt, key, purse, or scarf. Height and weight were recorded twice. If the two height and weight measurements differed by greater than 0.1 cm or 0.25 lb, respectively, a third measurement was taken by the same researcher.

BMI of the parents and children were calculated by converting height from cm to meters and weight from lbs to kilograms and then dividing weight by height squared (Keys et al., 1972). This study uses the following definitions for child at risk of overweight and child overweight (obesity). A child 'at risk of overweight' has a BMI  $\geq$  85th percentile. 'Child overweight' (obesity) is when the child's BMI  $\geq$  95th percentile, based on the age and sex specific percentile, BMI growth charts (Centers for Disease Control and Prevention, 2000). After body weight and height were taken, children were escorted to an activity area while parents completed a one page demographic survey and the focus group discussion.

The focus group was designed to explore parental perceptions of the physical activity patterns of their family thru a semi-structured group process which supports the creation and sharing of interesting insights. Social cognitive theory guided this study. Initial questions were developed based on a review of the literature. The central questions used during the focus group were:

- What kind of physical activities do you do?
- What kind of physical activities do you do with your child?
- What kind of physical activities does your child enjoy?
- What kinds of barriers prevent you and your child from being physically activity?
- What do you think or believe are the benefits of the physical activity?"

The focus group discussion session with all parents engaged in the discussion lasted approximately 120 minutes, and was audio taped. A research assistant facilitated the discussions while the principal investigator made comprehensive field notes related to group dynamics and nonverbal behaviors. Opportunity was provided for parents to validate and clarify perceptions, subsequent to the researcher asking questions and making summative statements during the focus group process. This added credibility to the data collected and analysis of data. To encourage participation in the focus group, all parents were offered refreshments and given a gift certificate following the session.

### *Data Analysis*

Verbatim transcripts of audiotapes were the primary data used in the content analysis. Using techniques described by Miles and Huberman (1984), the researcher conducted a thematic content analysis using the group's communication as the unit of analysis. Themes of the focus group's discussion were systematically identified, categorized, and coded using N ViVo qualitative analysis software (2006). Notes taken during the focus group were analyzed along with the transcribed data. The researcher read all the transcripts while simultaneously listening to the tapes, to fill in missing words and to ensure the quality of the transcripts. All analysis was verified by the research assistant and an external reviewer to minimize analyst bias.

## **FINDINGS**

While parents were recruited by having a preschool child with BMI  $\geq$  85th percentile, the majority of parents were overweight (80%). The mean BMI of parents and children were 26.1 (range 24.6-27.4) and 17.3 (range 17.1-17.8) respectively. Only two parents were normal weight (see Table 1). These two parents had children that were at the lowest BMIs, 17.10 and 7.13 respectively. The remaining eight parents had children that had BMIs at 17.20 to 17.80. The findings support that parental BMI is associated with their children's BMI (Klesges, Klesges, Eck, & Shelton, 1995). The majority of parents completed college (demographics reported in table 1), reported that they were working full time (70%), and had very limited time to spend with their children.

The following findings focus on the analysis of the qualitative data. Since this is a pilot with only one focus group of 10 parents representing 10 families, the findings should be interpreted with caution and need further studies with other rural focus groups to expand maximum variation within the purposive sample.

### *Physical Activity of the Family*

All parents reported that they were not engaging in any structured healthy physical activity or organized sports beyond their daily work and functional activities. The usual, weekly physical activity that most parents reported doing included cleaning their living space, and hand washing/waxing a car. The other common physical activities identified included walking, biking, playing ball (during appropriate seasons), and play wrestling with their children. When asked about the average amount of time on a weekly basis, that the parent spent by oneself doing physical activity, their reported time averaged to approximately 50 minutes.

The amount of time that parents spent with their children in doing an activity was approximately 15-20 minutes a day during the week, and 30-50 minutes a day during the weekend. Most of the parents agreed that they usually let their children engage in their own play behaviors. For example:

As we are working outside the house, we have little time to do physical activity or play with our kids. We just let them play in their own activities and they always have their own activity [by] themselves.

In the winter, I just let them play with each other in the house. We have lots of books and games. Dad and I sometimes wrestle with them and that is what we do as a physical activity. During the summer, we walk around the neighborhood.

Another parent spoke of a creative way to help the children play in the winter, I snow blowed a circle track in our back yard so the kids would run around there and...my daughter would pull our son on the sled.

Most parents felt that their children were active and did physical activity every day by “climbing on the sofa, running around and chasing each other in the house.” When asked about the average television viewing as part of the daily activities, the parents reported that it was 4-5 hours a day.

### ***Activity Enjoyed “Needs to Fit”***

Besides the identified activities above, the parents spoke of activities that their older children were involved in for example gymnastics. What was apparent among the parents was the importance of fitting the activity to the child and determining if it should be a team sport or a singular activity like *Tea Kwon Do*. The child’s personality needed to be considered in determining what he/she would be involved in and how to assist/support this process of being PA. A parent stated:

Parents have to know their own kids because activity means a lot of different things and not every activity [is a fit.] My nephew was not a team sport kid from the get go...he laid around a lot...they couldn’t get him active...then they realized TaeKwonDo which was totally up his alley and now I’m kinda tuned into that...[Also] you can’t just say yep, go ahead and go. Some kids need that bond of either a friend or a parent that actually goes with them.

Another parent spoke of the following to describe their variation in activity due to seasonal changes including the decision making process that recognizes fit:

Summer or winter we keep them involved in their own activities. Our daughters are both in gymnastics up until a week or two ago. They pulled my son’s gymnastics so we’re looking for whatever else he can do until we can redo something in May and went to Tae Kwon Do. He’s been very interested in that. [I have] already got them signed up for swimming lessons. So they each have some type of activity that they get going. And they have to like it. I made my son play soccer. He will go to the YMCA and play soccer for the six-week sessions, but I made him do two sessions...he doesn’t like it and doesn’t want to go back. So I let him chose. Do you want this...or do you want to do this? Yes! So they always each have their own activity themselves, a weekly thing. Then as a family in the winter, it gets hard to get out but we did, until we got the really cold spell, we were getting out and going skating. We bought skates for everyone including our 3-year old and once or twice we would get out and go skate...After church and lunch, we will go sledding to get our exercise, on that hill (dike). So we specifically look for those kinds of things to do to get out. My kids are happy. They have been begging to go to the mall and

play in the play area. That gets them out of the house and they run around for an hour and just play and climb on that stuff. And then in the summer, we go walk around the neighborhood. We ride our bikes, but as a family we will all get on our bikes, our 3 years old can't ride and keep up with us, and we pull her.

This information was provided by one of the parents and the degree and variety of PA is an outlier from the rest of the group. However, this quote explicates requirements needed to accomplish this level and varying of activity which includes resources, transportation, and purchasing power. Not all group members had these available as the findings under barriers will show.

### ***Barriers to Physical Activity***

The barriers to doing physical activity and engaging in active play with their children discussed in the focus group by the parents emerged as personal and environmental barriers. The most common personal barrier expressed in the group was lack of time and low energy levels related to performing multiple roles. Parents indicated that they had work and family responsibilities; they felt too tired to do anything else. A parent encapsulated the personal barriers in the following quote, "I work full time, then I come home, I have to take care of my kids and do some housework. When I finish, it is bed time. I just want to go to bed."

In addition to the personal barriers of lack of time and decreased energy, several environmental barriers emerged. Parents voiced most concerns regarding a lack of programs for the whole family including childcare issues, lack of flexibility in program offering, high cost of memberships and activities, and the weather. These participants showed concern about the family engaging in exercise and activities together. Just as in their discussion of eating habits/preferences during part one of the study, the parents believed that the children learn by watching the role modeling of their parents. The environments for PA are not conducive or not designed to support this concept. The following quotes address these concerns:

By our children seeing us do it, that makes them want to do it. [My child will say,] "Mommy, I want to do it Mommy, watch me jump like you can jump. Watch me do jumping jacks." So everything that we are involved in, is taking away from the opportunity for us to teach our children [if they can't be involved also]. We need a program that the whole family can partake. The whole family needs to do it or we are not going to do it.

Other parents stated: Most programs do not provide child day care or child facilities and so I cannot go. We need a place that parents and kids can go and do activity together. When my kids see us do exercises or activity, they want to do it too. However, what we have now is taking away from the opportunity for them [children] to do activities with the parents.

In regards to the timing of the programs offered several comments were made. The following one is an example of this information:

Time is a factor. Most programs, even church, are offered for the evening like 6.30 – 8.30 PM or 7.00 – 9.00 PM. My kids go to bed between 7.30 and 8.00 PM. I

don't want him to be out this close to his bed time. We don't have a program that is offered at varying times or is flexible.

Because the parents worked they often had set schedules that dealt with all the tasks and time related stresses that need to be dealt with on a daily bases. This allowed for very little flexibility in their use of time and inclusion of PA. Cost and the weather are also environmental barriers for the parents to get involve in physical activity. Some parents stated and others agreed that:

Most programs required a membership and the cost is unreasonable. We have a long winter here and we can't play outside. It is too cold to go out. During the summer, we walk or sometimes we play ball but the summer is short.

Furthermore, the weather or four seasons required variation in the types of activities they can do.

Parents agreed, we'll admit, like he said, the wintertime they (children) get more video games and things like this. There's not as much [to do] but in the summer they know my rules. My son will tell you no video games unless it's a rainy day. I'm like- you have 4 months to be outside. If you don't go out that is your choice but you're not playing with the computer or the video games unless it's raining.

What is again apparent in the quotes is the perception that playing/being busy outside or inside is equivalent to structured healthy physical activity or at least meets the expectation that their children are physically active in a healthy way.

### ***The Benefits***

When the parents were asked about their beliefs regarding the benefits of the physical activity, most of them expressed that physical activity helps to reduce stress and tension. The following is a quote that a parent stated related to the benefits of PA for the child and herself:

It reduces stress and tension. I think, like you (another participant) said, school recess is a break [for PA]. They [kids and teachers] need it. I don't get a break before lunch...and I notice the difference myself if I don't take time for myself. Those kids need that recess at school. They need to go run off that energy; you feel refreshed and ready to go. I know how I feel. I get up at five and exercise until six in the morning because I can't do that at night, but those few nights where I have to, I'm dragging, but think how you feel when I'm done. I do feel better. It helps keep the weight down and it helps me.

Some parents reported that physical activity helps their children sleep better. For example, "I noticed that my child sleeps deeply when he plays hard like running all day." All parents agreed that part of the benefit of physical activity to their children is that they do have fun doing it. Even with this knowledge, they also stated that they have to give it priority over other chores, (e.g. "over dusting") for it to occur.



## DISCUSSION

This study is the first to qualitatively examine physical activity patterns of families with overweight preschool children living in rural areas. Although parents in this study agreed that physical activity reduces stress and tension, promotes enjoyment of life, and establishes deep sleep, the majority of them never encouraged their children to engage in any structured healthy physical activity. Even though, their children were obese, the parents perceived their children to be active and their standards for activity to not be a problem; and in essence saw the daily play behaviors of their children to be adequate.

The National Association for Sport & Physical Education (2000) has set guidelines for preschoolers regarding kinds and amounts of physical activity. The following is a list of three of the five guidelines relevant to this discussion:

- Preschoolers should accumulate at least 60 minutes daily of structured PA.
- Preschoolers should engage in at least 60 minutes and up to several hours of daily, unstructured PA and should not be sedentary for more than 60 minutes at a time except when sleeping.
- Preschoolers should develop competence in movement skills that are building blocks for more complex movement tasks.

The description of PA presented by the parents indicates that these guidelines are not being met at home or even at Head Start where the child gets 20 minutes of structured PA and approximately 35 minutes of unstructured active play/exercise. Furthermore their sedentary time in front of the TV and at the computer should not exceed the 60 minute limit (guideline 2). In support of limiting sedentary behavior, the American Academy of Pediatrics has recommended that children over 2 years of age should limit their television viewing to no more than 2 hours per day (Committee on Public Education, 2001). These families, however, spent 4 to 5 hours in front of the television; longer than both recommendations.

In addition to being physically active, children need to learn fundamental motor skills and develop health related physical fitness (cardiovascular endurance, muscular strength and endurance, flexibility, and body composition). The description of play behaviors at home and at preschool would not meet this criteria or the above third guideline. Some of the family's and organized sport activities mentioned as desirable and a fit with their child's personality would achieve this criteria/guideline. However, the parents identified barriers interfered with the ability for the majority of the families to engage in this level of structured PA.

Additionally, research suggests that parents play a significant role in motivating children to participate in physical activity (Kalakanis et al., 2001). Children of active parents are more likely to participate in physical activity or sports than do the children of passive parents. Children, particularly those who are young, learn and model the behaviors from what they see and observe from their parents and significant others (Golan & Crow, 2004). Children's and parents' activity levels might develop and be maintained accordingly because children and parents live in a shared family environment that provides both cues and social support for similar activity levels. Children, therefore, are more likely to be active and stay active throughout their lives if they see their parents being physically active and having fun. Research suggests that parents' physical activity and support, and opportunities to do physical activity or exercise were

associated with young children's physical activity (Golan & Crow, 2004). Young children are dependent on their parents for guidance and role modeling of physical activity patterns.

Some of the parents recognized the need to have their children see them do and then have their children engage with them in PA. It appears that daily expectations and schedules, and adult role behaviors over shadow the larger picture of needing health promotion and illness prevention strategies to be enacted on a daily bases through PA. The analyzed data supports that lack of role modeling and involvement in physical activities by adults is affecting the preschoolers' weight and levels of healthy structured physical activity.

The personal barriers discussed in this study were consistent with previous research conducted with different populations (Bellows-Riecken & Rhodes, 2007). Programs that include the whole family and provide to the child a visible presence of parents doing PA could help to increase physical activity levels of children and adults. However, there is an unspoken personal barrier that also exists that needs identification by the parents, which is lack of knowledge about the guidelines for healthy PA for their preschooler, and what a healthy weight level is for their child. Children attending Head Start programs are weighed and measured at a maximum of 3 times a year (personal communication with a local Head Start officer, May 2008) and parents have access to this information, yet these parents seemed unaware of their preschoolers' health status of overweight or obese based on national scales. This lack of knowledge/concern by parents is a barrier to engaging in their change of eating and PA habits. Therefore, it is important to raise awareness among the parents through the provision of information about national guidelines, positive outcomes of spending quality time with their children by doing physical activity, role modeling of physical activity, and reducing video games and family's television viewing.

Parents also need information about current research related to the effects of obesity in preschoolers on their long term health status including predispositions to health problems as adults. Patterns of physical activity/behaviors established in childhood may help to reduce the risk of morbidity and disability associated with a lack of physical fitness in adulthood. Importantly, adequate physical activity for all young people represents a cost-effective way to reduce the risk of obesity and other adult chronic diseases. Therefore, keeping children active is important to helping children stay healthy. The provision of information on the benefits of physical activity and potential negatives without it, through local newspapers, printed materials placed in pediatric clinics and family physician's offices, and by radio broadcasts, could begin to reduce this barrier of knowledge/awareness and begin to implant the seeds for change.

Environmental barriers voiced by the parents were weather, cost, and infrastructure. These could be altered through promotion of policies supporting development of infrastructures such as building indoor/outdoor walking trails, low cost user fees by subsidizing (at county, state, and federal levels) the maintenance of the infrastructures, flexible availability, culturally appropriate physical activity and family exercise programs in easily accessible schools, churches, and various community centers or gathering places. Currently in a few rural areas, city councils are collaborating with public school systems to reduce many of these barriers to engaging in structured healthy physical activity (Gangeness, 2007).

## **STUDY STRENGTHS AND LIMITATIONS**

This qualitative descriptive pilot utilized focused group methodology to gain preliminary information about physical activity patterns of the families of overweight preschool children. This method provides valuable thoughts, perceptions, and attitudes from a group of parents with

children experiencing weight problems. These findings begin to inform health care providers about the issues surrounding the promotion of physical activity of a rural population.

In regards to limitations, one should note that the findings reflect the perceptions of a small group of parents with overweight preschool children who had a college education thus the results may differ for families from different educational backgrounds and economics. More studies are required to determine whether these findings are indicative of the target population as a whole with maximum variation represented.

## **CONCLUSION**

Currently, more than one-third of U.S. children are overweight and at risk of becoming overweight (Ogden et al., 2006). Given the importance of this epidemic and the health consequences associated with this, serious attention should be given to all levels. Knowing the physical activity patterns of families with overweight preschool children may inform directions in planning and developing physical activity interventions within this population. Through the focus group discussion, participants presented personal barriers as lack of time and low level of energy due to many tasks, while identifying environmental barriers as program cost, program format, and the weather as significant interference in establishing healthy patterns of physical activity. However, the parents' unrecognized lack of adequate information (appropriate levels of structured activity and weight for a preschooler) which may be significant to motivating change is probably the greatest personal barrier.

These results provide initial insights into potential interventions that affect both parents' and children's physical activity. Health care providers can help parents to understand the type of physical activity that their children need, what being overweight or obese means, how an overweight preschool status can impact the child as an adult, and the need to influence the obesity epidemic by alteration of health policies and practices in their communities. A socioecological framework involving children, families, schools, and their communities would help to implement programming to address the unique needs of rural populations. This qualitative pilot reinforces current research understandings from the personal perspectives of rural families and provides new awareness about lack of knowledge which influences motivation.

## **CONFLICT OF INTEREST**

The authors have no conflict of interest to declare. The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

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