

Chapter I: Introduction

Rationale and Purpose of the Study

Obesity is defined as the condition where the ratio of body fat to total body mass is higher than the accepted norm. Overweight is an excess of body weight that includes all tissues (Gale Encyclopedia, 1998). In 2000 the prevalence of obesity among adults, aged 18 years and older, in the United States (U.S.) was 19.8% (Mokdad et al., 2001). Mokdad et al. reported that 27% of adults reported no physical activity and another 28% said that they were not regularly active (2001). Furthermore, only 24% of U.S. adults reported eating five or more fruits and vegetables daily (Mokdad et al., 2001). The Center for Disease Control (CDC) estimates that 300,000 deaths each year are the result of poor diet and physical inactivity (CDC, 2000). In 1995, the National Institute of Health (NIH) stated that the total cost of overweight and obesity in the United States was \$99.2 billion (Wolf and Colditz, 1995). These figures are sobering. Unfortunately, the prevalence of overweight and obesity is not only seen in adults. Children are the newest candidates for obesity. Overweight and obese children run the risk for numerous health consequences both now and later as adults.

Childhood obesity is a growing problem in the United States. Over the past twenty years the number of overweight children and teens has nearly doubled (CDC, 2001). The Center for Disease Control (CDC) has declared that childhood overweight and obesity has become a national epidemic (2001). Also, research has shown that overweight children become overweight adults (Birch et al., 2001). Thirty percent of adulthood obesity begins in childhood (Styne, 2001). Obesity that continues into adulthood causes a greater risk of heart disease, diabetes, and other serious health problems (CDC, 2001). Obesity in childhood is associated with an increased risk of heart disease, hypertension, type 2 diabetes, ovarian hyperandrogenism, respiratory compromise, blount disease (bowing of the legs), flatfeet, low bone density, cholelithiasis, and hepatic steatohepatitis (Styne, 2001).

Many factors account for the increase in childhood overweight and obesity. One factor is the poor nutritional status of America's youth. Sixty-seven percent of youth exceed the dietary guidelines for fat intake, 72% exceed the recommendation for saturated fat intake, and only 18% eat the recommended five daily servings of fruits and

vegetables (CDC, 2000). More fat and less fruits and vegetables contribute to the prevalence of obesity. Also, the prevalence of snacking has increased, however the nutrient density of these snacks has not (Jahns et al., 2001). Childhood obesity has been linked to the high consumption rates of sugar-sweetened drinks, such as soda and fruit drinks (Ludwig et al., 2001). Fruit juice consumption by children is of growing concern because of the high sugar content (Dennison et al., 1997). Another nutritional concern of children is their breakfast habits. Children who skip or have an inadequate breakfast tend to make poorer food choices throughout the rest of the day (Ortega et al., 1998).

Another contributing factor to the rise in childhood obesity is a lack of physical activity. Strauss et al., found that children spend 75.5% of the day inactive (2001). Only 1.4% of the day was spent in vigorous activity (Strauss et al., 2001). Physical inactivity is an important contributing factor in the maintenance of childhood obesity (Troost et al., 2001). Children who have low levels of physical activity tend to gain more subcutaneous fat than do more active children (Moore et al., 1995). Television is a major factor in the decreased amount of physical activity in children. Television viewing replaces time that children could be spending in activity (Robinson, 2001 and Andersen et al., 1998).

Parents play an integral role in the development of childhood obesity. Well-meaning parents who restrict foods or institute a “clean plate” rule actually place their children at a greater risk for obesity (Birch, 1999). Also, parental modeling is a factor. Children replicate what they see (Klesges et al., 1991). If parents are not setting a good example of good nutritional habits and physical activity, then the children are more likely to not pick these habits up as well (Birch et al., 2001).

Child care providers also influence the choices that children make. Child care providers have the opportunity to be positive role models regarding nutrition and activity. Child care providers can demonstrate these skills both in the classroom and in their own lives (ADA, 1999). Child care settings are important environments where food related behaviors are established (Nicklas et al., 2001). Child care providers can be important role models for developing sound nutritional and physical activity habits.

However, the child care industry has many problems. Low salaries and a lack of benefits make this profession unappealing (U.S Department of Labor, 2000). In 1998, Virginia had a last place ranking among the 50 states in the median hourly wage paid to

child care workers. High turnover rates plague this industry because of the low wages and lack of benefits (Kid's Count in Virginia, 2001). High turnover rates make it difficult, for not only the staff, but also the children.

Child care providers need education on nutrition and physical activity in order to teach these concepts and prevent childhood obesity. The Cooperative Extension is an educational resource that child care providers can use. The Cooperative Extension is a dynamic organization that partners with the federal, state, and local governments. Nationally, the Cooperative Extension is funded by and under the direction of the United States Department of Agriculture (USDA). At the state level, land grant universities comprise an intricate system in three broad areas: agriculture, family and consumer sciences, and 4-H. Locally, Extension agents carry out educational programs in each county. The Virginia Cooperative Extension (VCE) responds to the needs of individuals, families, groups and organizations with educational programs (VCE, 2001). These programs provide “research-based education that enhances the quality of life of Virginia’s citizens and families and supports their self-sufficiency and economic, social and physical well-being” (VCE, 2001). In the past, Extension programs have targeted child care providers. Many agents have successful interactions and networks with child care providers across the state of Virginia.

Child care providers are essential contributors to the growth and development of children. Childhood obesity is a preventable disease with proper education, nutritional practices, and role models. Therefore, it is essential that child care providers be trained on the factors that contribute to childhood obesity. Nutrition education needs to be in place for child care providers to learn correct nutrition concepts such as the number of servings, serving sizes, and nutrient composition of different foods. The Cooperative Extension is concerned about the health status of children and how child care providers can positively enhance children’s nutritional and physical activity status. With the proper nutrition education, child care providers can be effective role models and teachers for good nutrition and physical activity habits. There is limited research on knowledge, perceptions, and practices of child care providers with regard to childhood obesity. Extension education is designed to create positive change in people’s attitudes,

knowledge, and practices. This research will fill a gap in Virginia and give baseline information for Extension to develop effective programming.

Purpose of the Study

The purpose of this study is to assess the knowledge, perceptions, and practices of child care workers relative to the factors influencing childhood obesity. From this study, specific information will be obtained to help design effective nutrition education strategies for child care providers.

Research Questions

1. What do child care providers perceive as the major health concerns of children?
2. What are child care providers' perceptions related to childhood obesity?
3. What do child care providers perceive as the major nutrition concerns of children?
4. What physical activity concerns do child care providers have for children in child care?
5. What kind of modeling occurs between the child and the child care provider?
6. How do child care providers incorporate and use nutrition education in the care of children?

Chapter II: Review of the Literature

Research regarding the knowledge, perceptions, and practices of child care providers with regard to childhood obesity is limited. Research studies have examined the prevalence and factors of childhood obesity as well as the importance of the child care providers' role in a child's life. The literature review focuses on the overall problem of childhood obesity and the important factors that contribute to this epidemic. The review also focuses on general characteristics of child care work and how child care providers influence children. Finally, literature on focus group and participatory rapid appraisal methodologies is presented.

Childhood Obesity

Childhood obesity has become a national epidemic in the United States (Styne, 2001). In 1999, the National Health and Nutrition Examination Survey IV (NHANES IV) estimated that 13% of children ages 6-11 and 14% of adolescents ages 12-19 are overweight. (CDC, 1999). Thirty percent of adult obesity begins in childhood (Styne, 2001). For children, overweight and obesity are a source of social isolation, distorted body image, and social rejection (Dwyer et al., 2000). Childhood obesity is rampant in the U.S. and the consequences of such an epidemic are severe.

Childhood obesity is not only measured by scales, but also by Body Mass Index (BMI). BMI is the ratio of body weight, in kilograms, to height, in meters squared. The percentile rankings of BMI are used for classifying a person as overweight or obese. A BMI of 25-29.9 is considered overweight. Obesity is broken into the following three classes: (a) class I is between 30-34.9, (b) class II is between 35-39.9, and (c) class III is greater than 40 (Powers and Howley, 2001). Having a BMI in the 85th percentile is considered to be at risk for obesity and a BMI in the 95th percentile is defined as obesity. From this definition, 22% of U.S. children are at risk for obesity and 10.9% of children, age 6-17 years are obese (Styne, 2001). However, there are some disadvantages of using this method to classify obesity. There is no way to identify muscular people from overweight people using the BMI system. For instance, a body builder might be overweight according to height-weight charts, but not be overfat. His or her BMI would show obesity or a risk for obesity even though this person is muscular and not over-fat (Powers and Howley, 2001).

Childhood obesity is associated with numerous health problems, both in childhood and later in adult life. According to Dr. Jeffrey P. Koplan, the director for the Center for Disease Control (CDC), “Overweight children are at risk for cardiovascular diseases, diabetes, and other serious health problems” (CDC, 2001). The Bogalusa Heart Study found that overweight children have an increased risk for adult morbidity and mortality, especially from coronary heart disease (CHD). They also found that obese children have adverse risk factor levels in adulthood (Freedman et al., 2001). Results from the same study found that 58% of overweight school children had at least one cardiovascular risk factor. Twenty percent had two or more risk factors (CDC, 1999). When obesity transfers from childhood into adulthood then there is a higher risk for cardiovascular disease, high blood lipids, high blood pressure, insulin resistance, gall bladder disease, and orthopedic and sleep disorders (Dwyer et al., 2000).

Factors Associated with Childhood Obesity

Many factors contribute to the prevalence of childhood obesity. Poor nutrition including high consumption of fat and sugar play a major part in the rise of childhood obesity. High rates of snacking and soda consumption with low rates of fruit and vegetable consumption play a part as well. A lack of physical activity with an increase in television viewing are main contributors in the rise of childhood obesity. Parents and caregivers play a major role in the prevalence of childhood obesity. Parents and caregivers have the ability to be positive role models for their children and instill healthy habits in them.

The nutritional status of children greatly affects their propensity for obesity. The focus of childhood nutrition has now shifted from preventing nutritional deficiencies to avoiding overconsumption of certain nutrients (U.S. Department of Health and Human Services, 1995). Children’s diets are plagued with too much fat and too much sugar. Research has shown that of 3307, 2-to-19 year olds, 45% of the children’s intake came from discretionary sugar and fat (Birch L., 1999). The Continuing Survey of Food Intakes by Individuals (CSFII) in 1994-96 found that only 30.6% of children under the age of 5 met the recommendation of 30% or lower calories from total fat. In children age 9 and younger, 31.0% met this recommendation. The survey also concluded that of children ages 5 and under, and 9 and under, only 19.1% and 20.6% respectively, met the

recommendation of having a saturated fat intake below 10% of total calories. Also, children do not eat the recommended amounts of fruits and vegetables. Less than 20% of children consume the recommended five servings of fruits and vegetables a day (Cullen et al., 2000). The Youth Risk Behavior Surveillance study in 1999 found that of high school students surveyed, 76.1% had not eaten five or more fruits and vegetables during the seven preceding days of the survey (McBean et al., 1999). When compared to the Food Guide Pyramid only 2% of children met all of the recommendations and only 10% met the recommendations for four or more food groups (McBean L, et al., 1999).

Excessive snacking is one of the many causes of childhood obesity. Combining data from the 1977-78 Nationwide Food Consumption Survey (NFCS, 1977), 1989-91 CSFII (CSFII, 1989-91), and the 1994-96 CSFII (CSFII, 1994-96), found that the prevalence of snacking has increased in all age groups. The average size of snacks and energy per snack was constant, however the number of snacking occasions increased significantly. Also, the nutrient composition of snacks decreased in calcium density and increased in energy density and proportion of energy from fat (Jahns et al., 2001). Further national studies have found that children ages 9 and under consume 21.1% of their calories and 19.8% of their total fat in a day from snacks (CSFII, 1998). Almost all snacking occurred at home with taste outranking nutrition as the most important characteristic of the snack (Cross et al., 1994). Takahashi and colleagues found that one of the behavioral factors causing obesity is snacking irregularity (1999). When snacking was irregular and not at structured time intervals, children were at a greater risk for obesity (Takahashi et al., 1999).

Another problem associated with childhood obesity is the rising consumption of soft drinks, fruit drinks, and fruit juices. Dennison and colleagues found that excessive amounts of fruit juice by preschool-aged children led to short stature and obesity (1997). In this study, obesity was more prevalent among children drinking greater than or equal to 12 fluid ounces of juice per day (Dennison et al., 1997). Ludwig and associates further noted that consumption of sugar-sweetened drinks, in general, is associated with an increased risk of obesity in children (2001). Americans aged 2 years and older consume about 82 g of carbohydrate per day from added sweeteners, which is about 16% of total energy intake. The largest source of these added sweeteners is soft drinks (Guthrie and

Morton, 2000). Among U.S. children and adolescents soft drink consumption has increased dramatically (CSFII, 1994-96). Soft drink consumption is inversely associated with milk, fruit juice, and the nutrients that are found in these beverages. High soft drink consumption is also associated with high energy intake, which can lead to childhood obesity (Harnack et al., 1999).

Breakfast is another nutritional concern related to childhood obesity. Ortega and colleagues found that obese people are more likely to omit breakfast (1998). Obese children have less satisfactory breakfast habits than do normal weight children. If breakfast is consumed, then it is more than likely inadequate in carbohydrates, thiamin, niacin, vitamin B6, vitamin D, and iron. Skipping breakfast or having an inadequate breakfast leads to poor food choices throughout the rest of the day, which in turn promotes obesity (Ortega et al., 1998). A study of obese women found that eating breakfast regularly helped to reduce dietary fat intake and minimize impulsive snacking throughout the rest of the day (Schlundt et al., 1992).

The average serving sizes for Americans has significantly increased in past years. Americans expect “super-sized” or “value-sized” portions instead of the serving portions that are consistent with the Food Guide Pyramid (Hill et al., 1998). The desire for these increased serving sizes has changed, however, the need for them has not. Children are no exception. As children move into the preschool age, eating is no longer only induced by hunger cues, but also environmental factors (Rolls et al., 2000). The portions that are offered three year olds do not affect their intake of that food. However, by age five, the greater the amount of food offered to a child, the larger amount that he or she consumes (Rolls et al., 2000). If children, by age five, are offered a bigger portion size they will consume more food than needed and increase their risk for obesity.

Physical inactivity is a leading cause of childhood obesity. There is a delicate balance between energy intake and physical activity. If there is as little as 105 kiloJoules (kJ) excess energy per day, then a person will become obese over time. Energy intake must equal energy expenditure in order for body energy stores to remain constant (Goran and Treuth, 2001). However, some children do not maintain this balance due to a reduction in physical activity. Goran and Treuth postulate that approximately 20% of children ages 8-16 do not exercise vigorously more than twice a week (2001). Only 25%

of high school students participate in daily physical education classes (Goran and Treuth, 2001). Strauss and colleagues found that physical activity levels significantly decline between the ages of 10 and 16 years (2001). They further stated that these children spent 75.5% of their day inactive. Only 12.6 ± 12.2 minutes were spent in vigorous activity each day (Strauss et al., 2001). Trost and associates conducted a study comparing the physical activity levels of obese and non-obese sixth graders (11.4 ± 0.6 years old) (2001). The obese children had significantly lower daily accumulations of moderate physical activity, vigorous activity, and bouts of moderate-to-vigorous physical activity (Trost et al., 2001). The Framingham Children's Study found that preschool aged children who have low levels of physical activity gain more subcutaneous fat than do active children (Moore et al., 1995).

One of the major reasons for physical inactivity in children is the amount of television watched. The American Academy of Pediatrics recommends that children not spend more than 2 hours per day watching television (Gortmaker et al., 1996). It is estimated that in the United States, 2-7 year olds spend an average of 2.5 hours per day watching television (Robinson, 2001). Results from the NHANES III found that 26% of U.S. children aged 8-16 years, watched four or more hours of television every day. Sixty-seven percent watched at least two hours per day. The children who watched four or more hours of television per day had significantly greater body fat and a significantly greater BMI than did children who watched less than two hours per day (Andersen et al., 1998). Gortmaker et al and colleagues found that television viewing is positively associated with the prevalence and incidence of overweight, and is negatively associated with the remission of overweight during childhood (1996). Television viewing can replace physical activity and promote energy intake. Increased consumption of foods while watching television, and increased snacking all lead to increases in energy intake (Gortmaker et al., 1996). Coon and colleagues found that families that watch television while eating meals have a decreased consumption of fruits and vegetables and an increased consumption of pizza, snack foods, and sodas (2001). Reducing the amount of television has even been used as an intervention strategy to reduce obesity in children. Both Faith and colleagues and Robinson found that reducing television viewing time is a

successful strategy in reducing or preventing childhood obesity (2001 and 1999, respectively).

Parents play an important role in the health of their child. Mothers play a crucial role in obesity prevention with preschool aged children because they play a big role in shaping the diet and activity pattern of their children (Jain et al., 2001). Overweight parents are more likely to have overweight children than non-overweight parents. Genes and environmental factors work together in developing a child (Birch et al., 2001). Tanasescu and colleagues found that the mother's BMI was a significant predictor of childhood obesity (2000). Parents influence feeding practices as well as nutrient consumption and physical activity patterns.

Parents are an integral part of the food preferences that are engrained early in life. Food preferences that are established in childhood often carry on into adulthood. Parental interactions with feeding influence the preferences that children establish (Birch et al., 2001). Preschool children have the ability to naturally regulate energy intake based on need. However, in some cases too much parental control over the child's eating habits can have detrimental effects. When parents offer foods as rewards or label them "good" or "bad" is when parental interaction becomes a problem (Birch, 1999). A child who is told to clean his or her plate may learn to ignore their internal satiety clues. Also, restricting access to certain foods promotes children's interest in and intake of the restricted foods when they become available. Feeding practices such as pressure and restriction can lead to overeating and then ultimately to obesity (Birch et al., 2001).

Parents also influence the dietary choices of their children. Cullen and colleagues revealed that parental modeling of fruit, vegetable, and juice consumption was correlated with higher intakes of fruits, vegetables, and juice by their children (2001). Also, consumption of fruits, vegetables, and juice by these children was influenced by the availability of these items in the home (Cullen et al., 2001). Parents also influence the amount of physical activity that children engaged in. Fogelholm and associates found that parental inactivity was a strong and positive predictor of child inactivity (1999). The same study also revealed that parental obesity was a strong predictor of child obesity (Fogelholm et al., 1999).

Since parents have such a big influence over the nutrition and activity patterns of their child it is important for parents to be good role models for these behaviors. Parents can provide an optimal environment in which healthful eating habits can be established. When children are given new foods from someone they look up, acceptance for that food increases (McBean et al., 1999). Also, parents can increase their children's physical activity patterns by first being physically active themselves (Fogelholm et al., 1999). Parents are important role models for encouraging healthful practices and preventing childhood obesity. Another important group that influences children is child care providers. Child care providers can create a suitable environment for the establishment of positive health habits. Child care providers have the unique opportunity of being a positive role model outside of the home (McBean et al., 1999).

Child Care Providers

Child care providers have the ability to reach numerous children from various backgrounds. According to the Children's Defense Fund (1999), there were approximately six million U.S. infants and toddlers in out-of-home care (Buell et al., 2000). Also, the American Dietetic Association position paper on child care programs reported that 60% of children under the age of five in the United States receive some form of nonparental child care. This translates into three out of every five children, age five and younger (JADA, 1999). In Virginia, the Department of Social Services (VDSS) regulates day care operations. The VDSS asserts that a child day center is two or more children under the age of thirteen in a facility that is not the residence of the provider or children, or thirteen or more children at any location. Under these conditions the center must be licensed, however there are certain exemptions, such as a religiously operated center. The VDSS sets standards for family day homes and child care centers to become licensed. These standards are minimum precautions against risks. For example, the standards are designed to prevent injuries and the spread of disease. The VDSS has set forth minimum standards for both licensed child day centers and licensed family day homes (Virginia Department of Social Services, 2001).

The VDSS has set forth minimum qualifications for the staff and directors of general (not therapeutic) licensed child day centers. No staff member can be a convicted felon or found guilty of a misdemeanor related to abuse, neglect, or exploitation of

children or adults. The staff must be of good character, capable of carrying out assignments, capable of being trained and supervised, and capable of successful communication. Staff should be able to communicate effectively with emergency personnel. The minimum qualifications of a center director are 3 years of programmatic experience, with 1 year in a staff supervisory role, and a high school diploma or G.E.D. (VDSS, 1998).

The minimum qualifications for family day homes are slightly different. The VDSS requires that caregivers in family day homes understand children and be able to relate to them with respect, courtesy, patience, and affection. The caregivers must be able to speak, read, and write in English. The caregivers must provide culturally sensitive activities to their children. The caregiver must be able to understand the instructions on prescription medicines, handle emergency situations, and communicate effectively with emergency personnel. Caregivers must also be responsible and of good character and reputation. Persons convicted of a crime involving child abuse, child neglect, or other offenses deemed inappropriate cannot be licensed caregivers. Finally, the caregivers must have a certification for pediatric first aid (VDSS, 1993).

Child care work, unfortunately, is not a very sought after job. High turnover rates plague the child care industry. Low wages are the basis for the high turnover rates. The average child care worker, who works a 40-hour work week, earns \$15,017 annually (Buell et al., 2000). A lack of benefits also contributes to the high turnover rate. It was estimated that child care workers, who work full-time, had a median weekly income of \$211, while the median weekly earnings of full-time wage salary workers in all occupations was \$549 (U.S. Department of Labor, 1999). In Virginia, it is estimated that 35-45% of child care staff leaves each year. In 1998 the median hourly wage for child care staff was about half of that paid to all other workers, which put Virginia in a last-place ranking among the 50 states (Kids Count in Virginia, 2001). Low wages and little benefits are the main reasons why child care work has such a high turnover rate.

The cost of child care to parents is great, even if the staff salaries are not. In 1995 poor families spent 35% of their income on child care (U.S. Census Bureau, 2000). Child care is the third largest expense, on average, for all families with preschool age children. Almost half of families that have a child under the age of 13 spend an average of 9% of

their monthly earnings on child care. In Virginia the average cost of one year of child care, for an infant or toddler is greater than the average cost of one year's tuition at a state run 4-year college or university (Kids Count in Virginia, 2001).

Licensed child care centers not only must meet certain staff regulations, but also they must meet certain nutrition regulations. These are some of the nutrition requirements that the VDSS mandates for licensed child day centers (VDSS, 1998). The centers are required to schedule times for snacks and meals, with at least 1.5 hours, but no more than 3 hours, between each meal and snack. Children arriving for a half-day of care should receive lunch, if they have not already eaten. Water and non-caffeinated beverages should be offered at regular intervals to nonverbal children. All meals and snacks should meet the most recent nutritional requirements of an authority such as the Child and Adult Care Food Program (CACFP) of the United States Department of Agriculture (USDA). Meals and snacks should contain a variety of nutritious foods with at least 3 sources of vitamin A and at least 3 sources of vitamin C. Also a menu must be posted for the current week.

These are some of the regulations that the VDSS has put forth regarding nutritional standards at child day centers and family day homes. Some of the nutrition requirements that are in place for family day homes include serving children a variety of foods from the basic food groups. Foods that are known choking hazards should not be served to children. All leftover food from plates should be discarded. Children should be served small portions with appropriate sized eating utensils and have access to water. Meals and snacks should be served appropriately during hours of operation. Menus should be planned, written, dated, and posted at least a day in advance. All milk and milk products should be pasteurized, with powdered milk only used for cooking (VDSS, 1993).

Child care providers spend a great deal of time with children and witness their nutritional habits. A study by Briley and colleagues asked staff members at a child care center about the food preferences of children (1994). The staff perceived that children did not or would not eat vegetables. They found that children like sweets and fried foods. They also reported that children liked foods seasoned with margarine, lard, or bacon. The staff at the child care center said that the purpose of preparing and serving food to

the children was to “fill them up.” One staff member noted, “I think I’m doing pretty good, just as long as the kids get full.” Convenience and cost were major factors in determining what kinds of foods that the center served (Briley et al., 1994). However, merely filling children up is not enough to ensure the nutritional quality of their diets. Studies conducted on the nutritional adequacy of meals served at child care centers showed differing results. Bruening and colleagues conducted a study of the CACFP at a child care center (1999). The study found that the children who received the CACFP meals had significantly higher intakes of various nutrients, such as vitamin A, riboflavin, and calcium than children who brought their meals and snacks from home (Bruening et al., 1999). A study conducted by Drake found that menus at child care centers are limited in variety and adequacy of nutrients (1992). Drake further noted that children may not consume adequate amounts of nutrients, and staff who planned the menus had limited knowledge regarding nutrient sources (1992).

The number of children in day care settings and the number of hours they spend there, make day care an optimal place for teaching good nutrition and physical activity habits. Child care centers can offer nutrition education and activities to promote good food choices in children (Drake, 1992). Making sound nutritional choices is the first step in preventing childhood obesity. The American Dietetic Association (ADA) postulated that the child care facility can be the centerpiece of nutrition education (1999). Child care providers can help children recognize and accept a variety of new foods. Child care providers also can plan activities around food principles and food safety (ADA, 1999). The ages of two to five years are critical in forming lasting healthy food practices. The caregiver is an integral figure in establishing healthy food habits (Nahikian-Nelms, 1994). The Society for Nutrition Education (SNE) recommended in 1990 to have “hands on” food and nutrition education as well as emphasize physical activity as a component of overall nutritional well-being (1990). SNE further stated that meals and snacks should be served in a small group setting with child sized utensils (SNE, 1990).

Child care providers are important role models for the children that are in their care. Spark et al., conducted an intervention to try to reduce fat in healthy start meals (1998). The researchers found that the teachers that were resistant to the reduced-fat meals in the daycare center discouraged the cooks from trying reduced-fat techniques and

were negative role models for the children in their classes (Sparks et al., 1998). The ADA further notes that child care providers can be positive role model for children. The ADA recommends the family-style meal in which the child care provider sits at the table and eats with the children. Child care providers should provide the children with a pleasant environment that would encourage children to enjoy and accept food. Conflicts should be avoided during mealtimes. Children will learn about food and nutrition through the messages that are sent to them by their caregivers (ADA, 1999).

Child care providers can help in the prevention of childhood obesity. Healthy meals and snacks are the springboard for sound nutritional messages and activities. Learning about food and nutrition at an early age will help build the foundation for healthy eating. Having good eating habits will help to reduce the risk for childhood obesity. Having child care providers as good nutrition and activity role models will further solidify the concepts taught in the classroom.

Research Methodologies

Focus Groups

Focus groups have been used in the nutritional field to determine knowledge, habits, and perceptions. Krueger and Casey assert that the purpose of focus groups is to understand how people think and feel about a certain issue, product, service, or idea (2000). Focus groups usually consist of five-ten people who come together to discuss a common interest or problem (Krueger and Casey, 2000).

Williams and Yanoshik have found that there are limited cases in which health professionals can assess the health needs of a community (2001). Instead, professionals should talk to the community to find out what their needs are (Williams and Yanoshik, 2001). Focus group discussions have been important in determining the foods available to children. Cullen and colleagues, using focus groups, reported that parental example was an important reason why children did not eat fruits, vegetables, and juice but preferred sweets and junk foods (2001). Researchers using focus groups have also found that fast food restaurants where children like to eat have a low availability of fruits, vegetables, and juice. Peer influences on the consumption of fruits, vegetables, and juice has also been reported from focus group discussions (Cullen et al., 2001).

Another study by Jain and colleagues, used focus groups to find out why low-income mothers do not worry about their preschoolers being overweight (2001). These mothers believed that they were unlikely to influence their child's predisposition to obesity. The mothers also felt that their children were at a healthy weight as long as their activity and social abilities were not impaired (Jain et al., 2001).

Omar and colleagues conducted a series of focus groups with caregivers to find out about the eating habits of low-income toddlers (2001). The caregivers lacked knowledge about meal planning, nutritious meals and snacks for toddlers, cooking skills, and food portions and servings. The focus groups were able to delineate some of the barriers for the caregivers and also provided them some resources for more nutritious meals and activities (Omar et al., 2001).

Participatory Methods

Participatory research is driven by the idea that in order for people to use a concept or product then they must be involved in the process of development. Participatory action research (PAR) uses citizen participation or a bottom-up approach (Simonson and Bushaw, 1993). Involving people in the process helps to solidify commitment, capacity, and talents (Kreuger and Casey, 2000). PAR has been used with child care providers and nutritional concerns.

Burden and colleagues conducted PAR with unlicensed child care providers (2000). They found that some of the participants preferred a "hands on" format that included interaction with peers. This interaction gave the child care providers an opportunity to discuss nutritional concerns with professionals as well as their peers, which enhanced the successfulness of the program. The researchers further stated that PAR methods may be especially useful for child care providers (Burden et al., 2000).

Participatory Rapid Appraisal (PRA) is a more specific form of PAR. PRA's can be implemented in a short period of time with minimal cost. The information provided by PRAs tends to be highly accurate (Cresswell, 1992). PRA is an effective way to obtain fast, accurate data.

Murray and Graham used PRA in order to determine the health needs of a small neighborhood in England (1995). From the appraisal they were able to create a neighborhood profile and determine which health services were in most need in that area

(Murray and Graham, 1995). Participatory rapid appraisal also has been used to create health interventions for homeless youth (Ensign and Gittelsohn, 1998). Participatory rapid appraisal is an effective way to reach a target community and effect change.

Triangulation of Methodologies

Often more than one data collection method may be used in a study so that the researcher can get a more holistic view of the setting (Denzin and Lincoln, 1994). Triangulation of qualitative and quantitative methodologies has been used to gather data about the perceptions of a certain population group. Triangulation involves integrating different types of data, methods, and approaches within one research project. Triangulation allows a more in-depth understanding of issues, provides different perspectives, and helps ensure accuracy (Goldberg, Rudd, & Dietz, 1999).

Triangulation techniques have been employed to promote healthier lifestyles. Goldberg and colleagues triangulated interviews and focus group discussions to determine the needs and preferences of African American women in order to design effective health strategies (1999).

Chapter III: Methodology

This chapter provides a description of the methodology used for this study. The following descriptions are provided: (a) overview of the research design, (b) methods for data collection, (c) sample description and sample selection procedures, (d) data analysis procedures, and (e) pilot focus group.

Overview of Research Design

Triangulation techniques employing qualitative (focus groups) and quantitative (participatory activities) methodologies were utilized in this study. Focus group studies include a series of discussions that obtain the perceptions, ideas, and opinions, of the participants (Krueger and Casey, 2000). Focus groups and participatory activities were utilized to “give voice” to all perceptions, knowledge, and practices. Specifically, triangulation techniques using these qualitative and quantitative methodologies were used to determine the knowledge, perceptions, and practices of child care providers in relation to the factors causing childhood obesity. As Denzin and Lincoln stated, triangulation of different methods are used to gain a more holistic view of a setting. Two or methods may be used simultaneously, provided the analysis is kept separate and the methods are not confused (1994). Six research questions were investigated. These questions were researched by correlating focus group questions with participatory activities (Appendix A). Six focus group sessions were conducted, and the first session served as a pilot.

Methods for Data Collection

The focus group procedures developed by Krueger and Casey were used for this study (2000). Krueger and Casey suggest that focus groups consist of five to ten people, but there can be as few as four, or as many as twelve. The purpose of a focus group is to bring people with a similar interest or common experiences together. Researchers can use the data obtained from at least three focus groups to compare and contrast central themes in the discussion. Krueger and Casey suggest that a skilled moderator facilitate the discussion in a comfortable environment (2000). The moderators for this study were the principal investigators. At each session a moderator, co-moderator, and an assistant moderator were present. The moderator and co-moderator team was the same for all sessions. An interview guide was used to facilitate the moderation of this study. The moderator not only led the discussions, but also the participatory activities. Participatory

exercises were used to involve the participants in the process and solidify commitment, capacity, and talents (Krueger and Casey, 2000). The participatory exercises also helped to quantify and rank the responses for future nutrition education programs.

The moderator followed the interview guide (Appendix B). The moderator began with a brief introduction of the research and the researchers present. The moderator or the co-moderator then explained the informed consent to the participants and any risks or benefits. All of the participants then signed an informed consent form. The first participatory activity was then conducted. The moderator then engaged the participants in the focus group questions and participatory activities. All discussions were taped in order for transcriptions to be made after the conclusion of the focus groups (Board, 2001).

Participatory activities are activities in which the participants were asked to make selections or rank their choices based on the question asked. The moderator reviewed the choices of the participatory activities with the participants and asked for any additions or corrections before the participants ranked the activities. Some of the knowledge based participatory activities were conducted in private, away from other participants. Participants were given colored note cards, symbolizing their first, second, or third choice. These cards were coded for gender and ethnicity. Participants placed one of the colored note cards in the envelope that he/she chose.

At the conclusion of each session, the moderator, co-moderator, and Extension representative conferred with one another about the common themes that emerged from the focus group discussion and activities. The taped conversations were then transcribed and analyzed (Board, 2001).

However, there are some limitations to focus group research. Focus groups should not be conducted if a consensus needs to be reached or if education is the main goal. When sensitive information needs to be collected, focus groups are not the best avenue. Also, focus groups should not be used to get statistical projections. Focus groups should not be used in emotionally charged environments and when the researcher has lost control over critical aspects of the study (Krueger and Casey, 2000).

Participatory approaches have limitations as well. Consistency and coordination are causes of concern when doing this type of research. Training of volunteers also is a

key issue. Once the research is conducted then decisions need to be made regarding the outcomes of the research. This process takes a great deal of time to plan, carry out, and analyze (Krueger and Casey, 2000).

Sample Description and Sample Selection Process

A Virginia Cooperative Extension Agent in Pulaski County recruited four of the five groups of child care providers that participated in this study. A Virginia Cooperative Extension Agent in Patrick County recruited the participants for one of the focus groups. Three to nine participants were recruited by survey response, phone calls, and flyers to participate in the each of the focus groups. A survey was mailed to 337 child care providers in planning district four, which includes the counties of Giles, Montgomery, Pulaski, Patrick, and Floyd. This survey was part of a previous research project concerning child care providers. The survey explained that focus groups on childhood obesity would be conducted and contained a space for participants to indicate interest in participating in the research. People who responded with interest were recruited for one of the focus groups. The Extension Agents also contacted child care centers and sent flyers to prospective participants. The Extension Agents arranged for the locations of the focus groups. The moderators arranged for refreshments for each group.

Data Analysis Procedures

A systematic and sequential analysis procedure was used to determine the results of the study. This type of procedure helped ensure that the results reflect what was communicated in the groups. Also, a systematic procedure helped to avoid making mistakes or overlooking key factors (Krueger and Casey, 2000). Audio-tapes were transcribed and analyzed using the procedures outlined by Krueger and Casey (2000). Through these procedures, the transcriptions were analyzed to determine common themes and sub-themes of the focus group discussions.

The participatory exercises were evaluated by determining the frequency of the choices that were given. A systematic scale was determined for the ranking participatory activity. A first choice answer received three points, second choices received two points, and a third choice answer received one point. The frequency of choices were then expressed as a percentage of the total answers.

Pilot Study Focus Group

A pilot test was conducted before the study, on January 16, 2002, to familiarize data collection personnel with the methodology, examine participant interactions, identify potential problems, and to modify focus group questions (Krueger and Casey, 2000). The data collected during the pilot group was not used in the analysis of the research study.

Chapter IV: Results

Qualitative and quantitative research data results are discussed in this chapter. Table 4.1 outlines the six research questions correlated to the focus group questions and participatory activities. Qualitative data results using themes and sub-themes for each focus group question are discussed. Themes and sub-themes from the focus groups are outlined and correlated to the research questions in Table 4.2. Quotes are used to illustrate predominant themes. Quantitative data from each participatory activity are provided and discussed.

Table 4.1**Focus Group Questions and Participatory Activities Correlated to Research Questions**

PA 1: Demographics activity
RQ 1: What do child care providers perceive as the major health concerns of children?
FGQ 1: What do you feel are health concerns for preschoolers? PA 2: Rank the top three health concerns for preschoolers.
RQ 2: What are child care providers' perceptions related to childhood obesity?
FGQ 2: How common is it to see preschoolers that are overweight or obese?
FGQ 3: How common is it to see parents that are overweight?
FGQ 4: At what point should something be done about the poor eating habits of a child that could lead to overweight? PA 3: Rank the top three factors that influence childhood overweight.
RQ 3: What do child care providers perceive as the major nutrition concerns of children?
FGQ 5: What do you feel are the nutritional or eating concerns for preschoolers? PA 4: Rank the top three nutrition concerns for preschoolers.
FGQ 6: Describe the snacks you typically serve.
FGQ 7: What kind of beverages do you typically serve with snacks and/or meals? PA 5: Identify the portion sizes of selected foods and beverages. PA 6: Identify the correct number of servings from the food groups.
RQ 4: What physical activity concerns do child care providers have for children in child care?
FGQ 8: What do you feel are the physical activity concerns for preschoolers?
FGQ 9: Describe the physical activities children participate in while in day care.
FGQ 10: How is television used with children in your care?
RQ 5: What kind of modeling occurs between the child and the child care provider?
FGQ 11: What role do you see yourself having in the health/nutritional well-being of the children you work with?
FGQ 12: What influence do you see your own personal health practices having on the children you work with? PA 7: Which health/nutrition practices do you try to achieve in your personal life?
RQ 6: How do child care providers incorporate and use nutrition education in the care of children?
FGQ 13: Describe the nutrition activities children participate in while in your care. PA 8: Rank the top three methods you prefer to receive nutrition education.

Note: RQ = Research Question; FGQ = Focus Group Question; PA = Participatory Activity

Table 4.2

Summary of Predominant Themes and Sub-themes Emerging from Focus Group Discussions

Research Question 1: What do child care providers perceive as the major health concerns of children?

I. FGQ: What do you feel are health concerns for preschoolers?

- A. Nutritional Issues
 - i. Fast food / Junk food
 - ii. Picky eaters
 - iii. Nutrient content of foods
 - iv. Parents
- B. Physical Inactivity
- C. Illness

Research Question 2: What are child care providers' perceptions related to childhood obesity?

II. FGQ: How common is it to see preschoolers that are overweight or obese?

- A. Not common in children they care for
- B. More common in communities
- C. More common in older children

III. FGQ: How common is it to see parents that are overweight?

- A. Prevalence
- B. Lifestyles

IV. FGQ: At what point should something be done about the poor eating habits of a child that could lead to overweight?

- A. Before overweight starts
- B. Start teaching good habits when they first start eating
 - i. Parenting skills
 - ii. Finish Plate
- C. Take good habits into adulthood

Research Question 3: What do child care providers perceive as the major nutrition concerns of children?

V. FGQ: What do you feel are the nutritional or eating concerns for preschoolers?

- A. Not eating enough vegetables
- B. Sugary foods at breakfast
- C. Picky eaters
- D. Junk food
- E. Parents
- F. Lifestyles

VI. FGQ: Describe the type of snacks you typically serve.

- A. Fruit
- B. Crackers
 - i. Crackers with peanut butter
 - ii. Crackers with cheese

- C. Cheese
 - D. Pretzels (soft and hard)
 - E. Nutri-grain bars
 - F. Cereal mixes
- VII. FGQ: What kind of beverages do you typically serve with snacks and/or meals?
- A. Milk
 - B. 100% Juice
 - C. Water

Research Question 4: What physical activity concerns do child care providers have for children in child care?

- VIII. FGQ: What do you feel are the physical activity concerns for preschoolers?
- A. Not enough physical activity
 - B. Time restraints
 - C. Need more space
- IX. FGQ: Describe the physical activities children participate in while in day care?
- A. Outdoor playgrounds
 - B. Music / Songs
 - C. Games
- X. FGQ: How is television used with children in your care?
- A. Viewing time of half hour to an hour
 - B. Movies occasionally
 - C. Computers

Research Question 5: What kind of modeling occurs between the child and the child care provider?

- XI. FGQ: What role do you see yourself having in the health/nutritional well-being of the children you work with?
- A. Child care providers interact with the children during the day
 - B. Physical activity with the children
 - C. Eat and drink what the children eat and drink
 - D. Family style meals
- XII. FGQ: What influence do you see your own personal health practices having on the children you work with?
- A. Divergent influence
 - B. Parents influence

Research Question 6: How do child care providers incorporate and use nutrition education in the care of children?

- XIII. FGQ: Describe the nutrition activities children participate in while in your care.
- A. Cooking / Preparation activities
 - B. Food Guide Pyramid

Participatory Activity 1: Demographics

Thirty individuals participated in five focus groups, which were held throughout Southwest Virginia. Twenty-nine of the participants were female and 1 was male. All of the participants were Caucasian. The first participatory activity was used to determine the length of time that participants had been child care providers and what kind of child care setting that they worked in. The majority (41.4%) of the participants had been child care providers for over ten years. The next most popular ranges of years worked in a child care setting were less than a year (17.2%) and three to four years (17.2%). The majority of participants (73.3%) worked at child care centers. The remaining participants worked in family day homes (13.3%) or other child care settings (13.3%). This information is illustrated in Table 4.3 and Table 4.4.

Table 4.3

Number of years participants had been child care providers N=30

Years worked in a child care setting	Participants n (%)
< 1 year	5 (17.2%)
1-2 years	3 (10.3%)
3-4 years	5 (17.2%)
5-6 years	2 (6.9%)
7-8 years	1 (3.4%)
9-10 years	1 (3.4%)
> 10 years	12 (41.4%)

Table 4.4

Type of child care setting N=30

Child care setting	Participants n (%)
Child care center	22 (73.3%)
Family day home	4 (13.3%)
Other	4 (13.3%)

Research Question 1: What do child care providers perceive as the major health concerns of children?

A focus group question and a participatory activity were used to elicit the child care provider perceptions related to the health concerns of preschool aged children.

Focus Group Question 1: What do you feel are health concerns for preschoolers?

Three major themes emerged from the discussion of participant's health concerns for preschool aged children. These included (a) nutritional issues, (b) physical inactivity, and (c) illness. The first major health concern that the child care providers had was nutritional issues. Even though nutrition concerns were discussed at greater length in later focus group questions, the providers still listed nutritional issues as an overall health concern for preschoolers. Four main sub-themes accompanied the topic of nutritional issues, which included (a) fast food/ junk food, (b) picky eaters, (c) nutrient content of foods, and (d) parents. Many participants listed fast food and/or junk food as a nutritional issue related to health. One participant captured the essence of the discussion:

All [of what they eat] is mainly junk food, a lot of junk food, you know you'll hear that more than anything.

Many participants also mentioned picky eaters as another nutritional issue related to health. One participant explained the children in her family day home just would not eat what she fixed, "Mine just don't want to eat anything. You fix it and wind up throwing it in the trash can."

The third sub-theme was the nutrient content of the foods that the preschoolers were eating. The child care providers mentioned the salt and sugar content of the foods consumed by preschoolers as a health concern. For example, a child care provider cited the nutritional content of the children's breakfast choices, "Like when they come in with Oreo cookies for breakfast or Nerds or Krispy treats . . . or chips."

The final sub-theme under nutritional issues is parents. Parents were mentioned in many of the focus group questions. Parents were cited as not giving the children proper meals or nutrition at home. One provider voiced the opinion of many others:

And a lot of them their parents you know, don't feed them as good at nights and in the mornings as some of them do. Some of my parents feed the kids real good, and some don't.

The second theme was a lack of physical activity. Many of the participants cited a lack of physical activity as a health concern for preschool aged children. Some of the participants related television viewing as a primary reason for a lack of activity. The participants also noted that a lack of physical activity is related to health problems, such as overweight. Two participants summed up the view of many child care providers:

Not enough exercise. Sitting in front of the T.V. too much.

I think sometimes the children don't get enough exercise. I've noticed that some of our children are completely out of shape, I mean I hate to say that but . . . they are completely out of shape, you know and they tire out really quick and I think a lot of times . . . they're at the T.V. or you know different things . . . they're not getting outdoors . . . they really need physical exercise and stuff to keep 'em fit.

Colds and illness was the third theme related to health concerns for preschoolers. This was a problem at the time that the focus groups were conducted. One of the groups had to be rescheduled due to illness of the children and staff. Some participants stated that, ". . . some kids get sick every two weeks." Other participants also noted that some of the children do not get the medical attention they need for these illnesses:

[Sickness] would be my number one and then they're not getting the medical attention that they need when, if they have a cold more than seven days a lot of children are not going to the doctor to make sure that it is just a cold.

Participatory Activity 2: Rank your top three health concerns for preschoolers.

A participatory activity was used to rank the health concerns for preschoolers. Participants indicated their first, second, and third choices by placing a colored, marked note card into the envelope beneath the picture illustrating the certain health concern. Total scores for each health concern are listed in Table 4.5. The child care providers ranked poor eating habits (26.1%), colds (12.8%), and immunization (11.7%) as their top three health concerns for preschool aged children. Obesity and overweight received only 8.3% of the points and was tied for the fourth ranking.

Table 4.5
Health Concerns for Preschool Aged Children

Health Concern	Total Points n (%)	Rank N=30
Poor Eating Habits	47 (26.1%)	1
Colds	23 (12.8%)	2
Immunization	21 (11.7%)	3
Ear infections	15 (8.3%)	4
Obesity/Overweight	15 (8.3%)	4
Air quality	14 (7.8%)	6
Safe/Clean Environment	11 (6.1%)	7
Malnutrition	11 (6.1%)	8
Diabetes	8 (4.4%)	9
Asthma	6 (3.3%)	10
Food Allergies	4 (2.2%)	11
Heart disease	3 (1.7%)	12
Lack of sleep	2 (1.1%)	13

Research Question 2: What are child care provider’s perceptions related to childhood obesity?

Another purpose of this research was to understand how child care providers perceive childhood obesity and how prevalent they think the problem is in their own child care settings and also in the general community. Three focus group questions and one participatory activity were used to elicit this research question. The focus group questions included (a) how common is it to see preschoolers that are overweight or obese, (b) how common is it to see parents that are overweight, and (c) at what point should something be done about the poor eating habits of a child that could lead to overweight?

Focus Group Question 2: How common is it to see preschoolers that are overweight or obese?

Three major themes emerged from this focus group question. These included (a) not common in the children they care for, (b) more common in communities, and (c) more common in older children. None of the participants stated that childhood overweight or obesity was common or prevalent in their child care setting. Many child care providers stated that there were no overweight children in their care, but that underweight or picky eaters were more of an issue. For example:

There are very few that are overweight that I’ve experienced in the classroom, there’s very few, you know, the rest of ‘em are underweight what I can tell, they’re underweight.

Very few times, most of the time you see them undernutrition, you know underweight.

Not common here . . . more picky eaters.

The participants cited that childhood overweight and obesity were more common or prevalent in their communities, which is the second theme. One participant estimated that half of the children in her community were overweight. For example, some participants had this to say about childhood overweight in their communities:

I see it a lot in my community there's a lot of bigger children if you asked them how old they were you'd probably be very surprised at how old they were.

In our area, I'd say fifty percent [overweight among children].

In the third theme, the participants noted that childhood overweight was more common in older children and not in preschoolers. Most participants thought that it was more common to see overweight in school age children and teenagers, "Not here and not with the younger children. But, more like school age, third grade on."

Focus Group Question 3: How common is it to see parents that are overweight?

Prevalence of overweight parents and lifestyles were two major themes that emerged from this question. Most of the participants said that it was prevalent or normal to see parents of the children in their care that were overweight. Many of the participants also cited busy lifestyles as a reason for such a prevalence of overweight among parents. Lifestyle issues such as time constraints and eating habits were cited as possible reasons why parental overweight is so common. Many child care providers emphasized:

I do a lot, and I think a lot of it is their eating habits, you know what time they eat . . . they don't have time to cook or have nutrition food, they grab a candy bar before they grab fruit or anything you know.

Not sitting down to a regular, wholesome meal. But, that's they're lifestyles now . . . I think it's because of the parent and the children are involved in too much.

I don't think they have time to fix a good meal or they just settle down and grab . . . whatever they can find.

Focus Group Question 4: At what point should something be done about the poor eating habits of a child that could lead to overweight?

Three major themes emerged from this focus group question. These included (a) before overweight starts, (b) start teaching good habits when they first start eating, and (c) take good habits into adulthood. A majority of the participants agreed that something should be done about childhood overweight before it starts and prevention is the key to stopping overweight in children.

The second theme was to start teaching good habits early. The participants stated that you should start teaching children good eating habits when they first start eating so that they can develop these habits. Many participants had similar comments on this:

I think if they start out in the home with good eating habits, nutrition and all that . . . it needs to start at the very beginning . . . even if they don't have overweight or things like that it's important for them to have those foods, it's important to start 'em at a young age.

Well, if you give them right now, their taste buds are beginning to be what they eat . . . taste buds they acquire . . . and if you give it to them now, even in small portion they will acquire a taste for the best foods. Now, if you give them chips and junky food, that's what they will acquire and that's what they will want, so it starts down here even when they're toddlers.

Two sub-themes emerged from the theme of teaching good habits early, (a) parenting skills, and (b) finish plate. Most of the providers recognized that parents set an example early on for their children's eating habits, for instance:

Do you think sometimes some children become overweight because the parents try to pacify them, they'll coax them into doing things, if you go do this I'll give you an ice-cream cone, etc. It's like a bribery thing, and then they get hooked on the junky food, I call it junk food, like chips, I'll give you a bag of chips if you go do this or if you go to school and don't cry or throw a tantrum.

You know that parent is taking the easy way out and sticking a candy bar in his mouth rather than giving it something that it'll need, well I'm not gonna have no part of it. They're gonna have to learn.

The second sub-theme associated with this theme is the concept of finishing the plate. Some providers noted that this was not a good practice to instill in children even though it was practiced in the past. However, one provider did mention that he encouraged a "Happy Plate" or finishing all the food on the plate. Some providers exemplified the negative aspect of cleaning the plate:

Parents say finish what's on your plate, take two more bites . . . and that's like an external cue for eating . . . children don't have the opportunity to say no, I'm full, I don't want any more, parents just make them keep eating.

I worked at one place where they had to eat every single thing on your plate, which was not good. I don't agree with that at all, cause I think they can eat enough that they can get full themselves, they know when they're full.

The last major theme was taking good habits into adulthood. The participants stated that in order for children to establish good eating habits that will carry into adulthood, then they need to be taught at an early age. Some participants expressed comments such as:

. . . you give them the food then they acquire the taste and then they'll like it, and then that's the way they will eat as they get older. . .

. . . it needs to start at the very beginning, that way they can take it all the way to their adulthood.

Participatory Activity 3: Rank the top three factors that influence childhood overweight.

A participatory activity was conducted in order to determine what child care providers perceived as the major factors causing childhood overweight or obesity. The ranking scores of the participants are listed in Table 4.6. The child care providers chose poor eating habits (23.9%), lack of time/lifestyle (22.2%), and television/computer games (15.0%) as their top three factors that cause childhood overweight. Parents/role models came in fourth with 11.7%.

Table 4.6
Ranking of factors that influence childhood overweight

Factors	Total points n (%)	Rank N=30
Poor eating habits	43 (23.9%)	1
Lack of time/lifestyle	40 (22.2%)	2
Television/Computer games	27 (15.0%)	3
Parents/Role models	21 (11.7%)	4
Family situation	19 (10.6%)	5
Physical inactivity	16 (8.9%)	6
Genetics	10 (5.6%)	7
Lack of skills and knowledge	3 (1.7%)	8
Advertisements	1 (.56%)	9

Research Question 3: What do child care providers perceive as the major nutrition concerns of children?

Three focus group questions and two participatory activities were conducted to access the nutritional concerns of preschool aged children. The focus group questions included (a) what do you feel are the nutritional or eating concerns for preschoolers, (b) describe the snacks you typically serve, and (c) what kind of beverages do you typically serve with snacks and/or meals?

Focus Group Question 5: What do you feel are the nutritional or eating concerns for preschoolers?

Six major themes emerged from the discussion of this question. The themes included (a) not eating enough vegetables, (b) sugary foods at breakfast, (c) picky eaters, (d) junk food, (e) parents, and (f) lifestyles. The majority of participants cited not eating enough vegetables as a nutritional concern. The providers stated that most of the children would eat fruit, but not many would eat vegetables. Several providers made comments on the lack of vegetable consumption:

They don't eat enough vegetables. Because when [she] serves anything, like today we had Brussels sprouts, the kids don't even know what that is, if it's not a corn or green bean, they don't know what it is, so therefore they will not eat it.

Certain foods I don't have a problem . . . can't get them to stop, but the vegetable part is where I'm having problems now.

But they don't eat enough vegetables, they'll eat any fruit you throw in front of them but vegetables . . .

The second theme was unhealthy or sugary breakfast foods. Many participants stated that sugary breakfast foods were a problem for their children. Parents would give the children these high sugar foods for breakfast before bringing them to the day care setting, for instance:

So, they come in with like chocolate candy bars and stuff like that in the mornings. And then they don't want breakfast because they've done filled up on candy.

Right and some of 'em will just give 'em something sweet and bring 'em in . . . pop tarts . . . that ruins 'em when they have to eat . . . makes 'em hyper.

Like when they come in with Oreo cookies for breakfast or Nerds or Krispy treats.

A third theme and nutritional concern for preschoolers was picky eaters. Some providers found it hard to provide nutritious food to their children that they would eat. One provider captured the essence of the picky eater discussion:

They won't touch it. I had other foods for them to eat . . . I thought well you know they'll eat this whether they'll eat any of the other things or not, but they wouldn't touch it.

Eating junk food was another nutritional concern, and fourth theme, for preschoolers. Some of the providers said that children were not getting enough nutritious foods, but were filling up on junk food at home. One provider summed up the opinion of some of the participants:

They are not used to eating vegetables, some of them do not eat any, all of it is mainly junk food, yeah a lot of junk food you know you'll hear that more than anything.

If it's not a hot dog or a chicken nugget they don't want it . . . everything I serve is a chicken nugget . . . that's what we see, everything that has any kind of breading on it is a chicken nugget, anything that is pink is a hot dog . . . so that's what they're feeding them at home.

Parents were the topic of the fifth nutritional theme. The child care providers were really concerned about the nutrition that their children receive at home from their

parents. At times the providers cannot get the children to eat nutritious foods because of parental influence or interference. The majority of the parental discussion centered on these issues:

Here is just wish that parents would introduce them more to different types of food cause I have to serve it here and then they look at it and they're going ugh.

I'll have them tell me, look this is my kid, if I want it to have a candy bar in the morning, it will have a candy bar in the morning. That's none of your concern. . . Yep, you know, and it is your concern as the provider, because you're concerned about the child, but it's like a real fine line.

The last nutritional theme deals with busy lifestyles of families. Some of the participants explained that children and families have such busy lifestyles now that it makes it hard for them to have well balanced meals. Families grab whatever food they can find rather than preparing a healthy meal. Some participants had this to say:

Everybody's schedule is so busy that they don't have time to make the vegetables and the things, the bread and the milk group, the things that they really need.

Just the balanced meals at certain times of the day because I know people schedules it makes a difference . . . how they eat, where they eat at, and what they're eating.

Participatory Activity 4: Rank the top three nutritional concerns for preschoolers.

A participatory activity was used to determine the child care providers top three nutritional concerns for preschoolers. The scores for each nutritional concern are listed in Table 4.7. The child care providers selected eating too much fast or convenience foods (22.1%) as their top nutritional concern followed by not eating enough fruits and vegetables (16.6%) and not eating a variety of foods (14.4%). Eating too much sugary foods/drinks was a close fourth with 13.3%. No participant chose eating too much as a nutritional concern.

Table 4.7

Child care providers nutritional concerns for preschoolers

Nutritional Concerns	Total Points n (%)	Rank N=30
Eating too much fast or convenience foods	40 (22.1%)	1
Not eating enough fruits and vegetables	30 (16.6%)	2
Not eating a variety of foods	26 (14.4%)	3
Eating too much sugary foods/drinks	24 (13.3%)	4
Picky eaters	20 (11.0%)	5
Not drinking enough water	17 (9.4%)	6
Not drinking enough milk	8 (4.4%)	7
Eating too many snacks	5 (2.8%)	8
Eating too many fatty foods	4 (2.2%)	9
Eating too little	4 (2.2%)	10
Not eating breakfast	3 (1.7%)	11
Eating too much	0	12

Focus Group Question 6: Describe the snacks you typically serve.

This question had six major themes associated with it. The themes included, in descending order of prevalence, (a) fruit, (b) crackers, (c) cheese, (d) pretzels (soft and hard), (e) nutri-grain bars, and (f) cereal mixes. The second theme, crackers, had two sub-themes associated with it, (a) crackers with peanut butter, and (b) crackers with cheese. Most of the providers stated that they served a variety of these foods as snacks to the children that they care for. Some participants mentioned that the children preferred sweet snacks as opposed to vegetable snacks, “no, they have . . . they want their sweets . . . no, they don’t eat vegetables good. At all, any time, no . . .”

Focus Group Question 7: What kind of beverages do you typically serve with snacks and/or meals?

Three major themes emerged from this focus group question. The themes included (a) milk, (b) 100% juice, and (c) water. Most of the participants listed these three beverages as what they serve at all times to their preschool aged children. Some of the participants noted that different juices were served such as grape, apple, and orange juice, but all juices served were 100% juice. Only one participant admitted to serving

soda to her children, however majority of the participants mentioned their participation in the USDA meal plan under which no soda was allowed in their day cares.

Participatory Activity 5: Identify the portion sizes of selected foods and beverages.

A participatory activity was conducted to determine whether child care providers could look at different serving sizes of a food or beverage and determine which size was correct for a preschool aged child. Most people do not measure out portions with measuring cups, so it is important that a provider know how much to serve a child by “eye-balling” the measurement. The correct answers to this participatory activity are as follows: two tablespoons of peanut butter, four crackers, eight cubes of cheese, ¾ cup of juice, ½ cup carrots, and ½ cup of cut-up apples. These measurements are consistent with the serving sizes that are recommended for preschool aged children from the Food Guide Pyramid. The measurement sizes and number of people who selected each measurement is provided in Tables 4.8 and 4.9.

Table 4.8
Portion sizes of selected foods and beverages

Food or beverage	A measurement	B measurement	C measurement	D measurement
Peanut Butter	1 tablespoon	1 1/2 tablespoon	2 tablespoons*	3 tablespoons
Crackers	2 crackers	3 crackers	4 crackers*	5 crackers
Cheese	3 cubes	5 cubes	8 cubes*	16 cubes
Juice	¼ cup	½ cup	¾ cup*	1 cup
Carrots	¼ cup	1/3 cup	½ cup*	1 cup
Apples	1/3 cup	½ cup*	¾ cup	1 cup

* denotes correct answer

Table 4.9
Participant choices

Food or beverage	A N (%)	B n (%)	C n (%)	D n (%0
Peanut Butter	11 (36.4%)	7 (23.3%)	10 (33.3%)*	2 (6.7%)
Crackers	3 (10.0%)	10 (33.3%)	15 (50.0%)*	2 (6.7%)
Cheese	2 (6.7%)	11 (36.7%)	16 (53%)*	1 (3.3%)
Juice	3 (10.3%)	13 (44.8%)	10 (34.2%*)	3 (10.3%)
Carrots	18 (62.1%)	6 (20.7%)	5 (17.2%)*	0
Apples	16 (53.3%)	7 (23.3%)*	7 (23.3%)	0

* denotes correct answer

One tablespoon of peanut butter was chosen most frequently (36%) as the portion size of peanut butter, whereas 33% chose the correct answer of two tablespoons. The majority of participants (50%) answered correctly with four crackers. The next highest choice was three crackers with 33% of participants selecting this answer. Sixteen participants, or 53.3%, chose the correct response of eight cubes of cheese and 37% chose five cubes as their answer. The majority of participants (45%) chose $\frac{1}{2}$ cup of juice, whereas only 35% chose the correct serving size of $\frac{3}{4}$ cup. Eighteen participants, or 62% chose $\frac{1}{4}$ cup of carrots as their response, with the next highest answer being $\frac{1}{3}$ cup with 20.7%. Only 17.2% selected the correct serving size of $\frac{1}{2}$ cup for carrots. The last food category was apples. Fifty-three percent of the participants chose $\frac{1}{3}$ cup as the portion size of apples and 23.3% chose the correct answer of $\frac{1}{2}$ cup. Twenty-three percent also chose $\frac{3}{4}$ cup as the serving size of apples.

Participatory Activity 6: Identify the correct number of servings from the food groups.

Another participatory activity was conducted to test the participants' knowledge of the Food Guide Pyramid. The participants were asked to select the minimum number of servings that was allowable for a preschool aged children in a certain food group. The correct answers are as follows: three servings of the vegetable group, two servings of the fruit group, six servings of the bread group, two servings of the meat group, and two servings of the milk group. The minimum number of servings was taken from the Food Guide Pyramid for Young children aged two-six years old. The responses of the participants are presented in Table 4.10.

Table 4.10

Minimum serving requirements of the Food Guide Pyramid for preschoolers

Food Group	1 serving	2 servings	3 servings	4 servings	5 servings	6 servings
Vegetable Group	1** (3.8 %)	3 (11.5%)	5* (19.2%)	11 (42.3%)	4 (15.4%)	2 (7.7%)
Fruit Group		9* (31.0%)	4 (13.8%)	14 (48.8%)	1 (3.4%)	1 (3.4%)
Bread Group		10 (37.0%)	4 (14.8%)	10 (37.0%)	1 (3.7%)	2* (7.4%)
Meat Group		17* (56.7%)	10 (33.3%)	3 (10.0%)		
Milk Group		1* (3.1%)	9 (28.1%)	14 (44.0%)	6 (18.8%)	2 (6.3%)

* denotes correct answer

** total score, n (%)

The majority of participants (42%) believed that the minimum number of servings of vegetables for a preschool aged child is four servings. The correct answer of three servings of vegetables was chosen by 19% of the participants and 15% thought that the correct answer was five servings. Forty-eight percent of the participants selected four as the minimum number of servings for fruit, while 31% answered correctly with two servings of fruit. Thirty-seven percent of the participants both thought that the minimum number of servings of the bread group is two servings and four servings, respectively. Only 7.4% of participants chose the correct answer of six servings of the bread group. Fifty-seven percent of the participants chose the correct number (two) of minimum number of servings from the meat group. The next highest selection was 3 servings with 33%. The participants felt the minimum number of servings of the milk group was four servings (44%) and three servings (28%). Only 3.1% of the participants chose the correct answer of 2 servings.

Research Question 4: What physical activity concerns do child care providers have for children in child care?

A focus of this research was to determine what the physical activity concerns child care providers have for preschoolers. Three focus group questions were discussed related to this research question. The focus group questions included (a) what do you feel are the physical activity concerns for preschoolers, (b) describe the physical activities

children participate in while in your day care, and (c) how is television used with children in your care?

Focus Group Question 8: What do you feel are the physical activity concerns for preschoolers?

Three major themes emerged from the discussion of this question. These included (a) not enough physical activity, (b) time restraints, and (c) need more space. The majority of participants agreed that preschoolers do not get enough physical activity. Many child care providers emphasized this:

No, I think a lot of them are stuck in front of a television.

Not enough [physical activity] here or at home.

It's a lot of 'em that just don't want to participate there, I'm tired, I'm too hot, I want to sit down.

The second theme dealt with time restraints. The providers felt like the children did not have enough time at home to get the proper amount of physical activity. Some of the participants also noted that children did not get enough physical activity while in day care. Parental commitments and time spent in day care contribute to the lack of physical activity. Some of the participants shared these concerns:

But, a lot of our children are here 7:30 to 5:30 by the time they get home, have dinner, take a bath, it's bedtime so most of the physical activity they get is probably what we give them.

I think we probably offer it in the setting that they come to, but maybe when they go home they may not have that opportunity, they might not have enough throughout the day.

I think the parents might be . . . sometimes by the time they pick their child up, they're just so tired they say here [watch television].

The last theme that was mentioned in the discussion was a need for more space. The children need more room to run and play in order to get more physical activity. Here are the opinions of some of the participants:

They probably need more room to run around.

Not enough outdoor time. Even if it's cold outside, you know, even if it's ten minutes outside it's better than none.

Focus Group Question 9: Describe the physical activities children participate in while in your care.

Three major themes emerged from this focus group question. The themes included (a) outdoor playgrounds, (b) music or songs, and (c) games. Many of the participants mentioned outdoor playgrounds or activities as the physical activity that most of their children participate in. Some participants captured the essence of the discussion:

Exercises . . . play games . . . go for a walk . . . climbing. We have lots of climbing.

When they go outside they have slides, tunnels to crawl through, they have tires that they can walk on, they have cars they can exercise their arms . . .

The second common theme was music or songs. Many of the participants mentioned using music as a way of getting the children to be physically active. The music, songs, or musical instruments were popular on rainy days. Many of the participants commented on using music:

But, on rainy days, you can be in, you can use musical instruments, that's using the arms, you can clap your hands and do things like that.

You get a little bit more activity out of the children that way and I know we get our instruments and we march . . .

I have them make up their own songs. They were doing that today because of the rainy weather. They really, they were putting blocks together to make their own microphones, and Emily decided she was gonna play the xylophone . . .

Games were the last major theme for this focus group question. Several participants mentioned doing active games with their children as a form of physical activity. One participant shared a game that her children and her made up:

We did a circus theme and they thought it was real fun, we laid, I laid a rope on the ground that was our tightrope pack and some of them walked it, and the dog got hold of the rope and run with it, and they went chasing after the dog.

Focus Group Question 10: How is television used with children in your care?

This focus group question had three major themes including (a) viewing time of half an hour to one hour, (b) movies occasionally, and (c) computers. Most of the participants said that their children only watched about half an hour to one hour of television during the week. Most of the television time was spent on programs such as

Sesame Street, which has a learning component. The number of hours spent watching television increased at the family day homes, which allowed their children to watch television for about an hour a day. One family day provider explained the length of time her children watched television:

Well, I'm sorry, mine watches it from ten to eleven thirty, that's while I'm fixing lunch and washing dishes and everything and their nicely, politely sitting there watching t.v. while I'm doing it . . . because I can't have 'em around my feet when I'm cooking.

The second theme involved movies or videos. The participants noted that they allowed the children to watch movies, such as Disney movies, occasionally and the children also viewed educational videos occasionally. Some participants made comments about movies or video usage:

Once in a while we'll have a movie day on a Monday or a Friday, which is to my discretion.

Yeah, these are videos. And, they're about thirty minutes. You know, and they're pretty informative for the kids. I like try to get my hands on more.

The last theme deals with the use of the computer. The participants stated if the children have access to a computer while in day care then most of their computer time is spent on learning games. Some of the participants shared:

. . . learning games, Sesame Street . . . but it's during free play, there's not an activity where they sit down . . .

They have games on them, they can learn to count, they can learn different vocabulary words and all that stuff on them and they're pretty good. They like to play with them, and then you can go inside the story book and press on different pictures in the story book . . .

Research Question 5: What kind of modeling occurs between the child and the child care provider?

A focus of this research was to determine what the child care providers do to be positive role models for the children that they work with. Also, to determine if child care providers see themselves as a role model for children. Two focus group questions and one participatory activity were conducted on this question. The focus group questions were (a) what role do you see yourself having in the health/nutritional well-being of the

children that you work with and (b) what influence do you see your own personal health practices having on the children you work with?

Focus Group Question 11: What role do you see yourself having in the health/nutritional well-being of the children you work with?

This question had four themes associated with it. The themes included (a) child care providers interact with children during the day, (b) physical activity with the children, (c) eat and drink what the children eat and drink, and (d) family style meals. The majority of the providers expressed that they play a big role in the health and nutritional well-being of the children that they work with. The providers pointed out that the most of the children spend more time in their care than with their parents at home. Some of the providers also noted that they are important role models for the children. Some of the providers shared their thoughts:

They're more with us than they are at home.

Mine start coming in at five in the morning and leave at five thirty in the evening, so I mean their parents aren't with that little ten month old kid long, cause when they get home it's gonna get a bath and go to bed.

Yeah, because you know, you think about it we get the children a lot of times we're feeding 'em three meals a day. You know, and making sure that they try to stay on task, share, get along.

I think since most children spend a majority of the day a day care center, that what we give them . . . just if they can get the nutrition here that's good because sometimes . . . when they go home they're not always receive[ing] what they should get.

The second theme for this focus group question was doing physical activity with the children. Most of the providers said that they participated in the same type of activities with the children that they care for. The providers also noted that this was an area that children need role models:

We jump, we run, we sit, whatever they do . . .

You have to [be a] role model . . . I think it makes them comfortable knowing that you will do the same thing that they will . . . it's jumping up and down, if it's dancing, if it's wiggling . . . you've gotta role model everything. . .

I was playing rescue 911 last week on the playground, so I figured people driving by thought that woman was crazy, but . . .

But, Andy's problem is lack of exercise, it's not that it's not there, it's just not that it's important to him . . . probably because he doesn't see me do it.

A third theme that came out in the discussion was that most of the providers eat and drink what the children eat and drink. In some cases the providers are not allowed to eat or drink anything that the children cannot have. If the providers are allowed to eat foods that the children do not get, then they try to not eat in front of the children. The providers thought that by eating the same foods that the children were and eating with them they provide a positive role model for the children. Many of the participants expressed:

. . . kinda like role models here too, because a lot of times they'll eat it if you eat it, sometimes they still won't but if they see you eating it a lot of times they'll eat it . .

If we're eating vegetables and fruit in front of them and eating healthy nutrition foods we're setting an example in front of them and they'll want to eat that, encourage them.

We're not allowed to eat anything different, which I wouldn't want to, which would be wrong, I eat what's served like with the children.

Some of the participants said that they have family style meals where they sit down with the children and eat with them. Of the providers who did not have family style meals, they were present with the children during meals and interacting with them. Some of the participants noted that while the children eating is an opportune time to discuss nutrition with them. Also, some participants stated that the children eat better when they eat with them. Some of the participants commented on family style meals:

It's not very relaxing for us when we're eating, but it's showing 'em that we all sit down and eat.

Try to encourage them to eat the things they don't like . . . and you'd be surprised a the children [who] like the broccoli . . . after you coax them into tasting it.

Focus Group Question 12: What influence do you see your own personal health practices having on the children you work with?

This focus group question had two themes associated including (a) divergent influence and (b) parents influence. Some of the providers thought that their own habits

greatly influenced the children. However, other providers thought that their own personal habits had little influence on the children. Here are some of the differing opinions:

I think they follow your eating habits, if you have bad ones, they're gonna follow that too.

Yeah, I eat things I don't like so they'll eat it, because they need to eat it.

A lot of 'em here, the guidance we give 'em here about their food and . . . physical activities, some of 'em that's all they get

Yeah, they're very aware, and I didn't think they were as much as I think I know sometimes

I think they . . . might see it but they're still not going too, even when we do sit down and eat the vegetables they still won't eat it.

They don't care what we eat . . . they really don't pay that much attention to what we're doing . . .

Another theme that emerged from this discussion was parental influence. Some of the participants felt that parents had a greater influence over the children than they did. For example:

Because his parents are from a rural area I assume that they probably eat greens and pinto beans and those kinda things because in certain areas . . . they eat more of those things . . . I would say he probably gets those kinds of things at home

. . . because if mom and dad aren't doing it then there's nothing I can do to make it happen.

Participatory Activity 7: Which health/nutrition practices do you try to achieve in your personal life?

A participatory activity was conducted to determine what health or nutrition practices the participants were currently trying to work on or achieve. The ranking scores for the participants are presented in Table 4.11. The top three practices that the participants ranked were getting regular exercise (18.0%), choosing more fruits and vegetables (15.7%), and eating a low-fat diet (12.2%).

Table 4.11
Participants' health and nutrition practices

Health or Nutrition Practice	Total Points n (%)	Rank N=30
Getting regular exercise	31 (18.0%)	1
Choosing more fruits/vegetables	27 (15.7%)	2
Eating a low-fat diet	21 (12.2%)	3
Limiting sodas	18 (10.5%)	4
Eating a variety of foods	17 (9.9%)	5
Eating breakfast regularly	13 (7.6%)	6
Limiting high calorie snacks	12 (7.0%)	7
Improving calcium intakes	8 (4.7%)	8
Limiting sugars	7 (4.1%)	9
Limiting salt	6 (3.5%)	10
Eating less cholesterol	6 (3.5%)	11
Limiting caffeine	4 (2.3%)	12
Not smoking	2 (1.2%)	13

Research Question 6: How do child care providers incorporate and use nutrition education in the care of children?

One important use of this research is to design nutrition education that will be used with these specific child care providers. Therefore, how child care providers currently incorporate nutrition education into their curriculums and how they like to receive nutrition education is crucial in obtaining this goal. This research question had one focus group question and one participatory activity associated with it. The focus group question was (a) describe the nutrition activities children participate in while in your care.

Focus Group Question 13: Describe the nutrition activities children participate in while in your care.

This question had two major themes, which includes (a) cooking/preparation activities and (b) Food Guide Pyramid. Some of the participants stated that their children participated in small cooking activities where they prepared their own snacks as a way of teaching the children about nutrition. Conversely, a couple of the participants thought that their children were too young for cooking activities. Some of the participants commented on the children's preparation activities:

Let 'em work with it, preparing their own food.

Well, I know in the preschool area . . . they do a lot of cooking activities and try to introduce nutrition into . . .

. . . we have nutrition activities during breakfast time, they get to make it and then eat it . .

Another theme was the Food Guide Pyramid. Some of the participants stated that they taught the Food Guide Pyramid as a way of introducing and teaching nutrition. Also, some participants stated that they used puppets and books as a way to teach nutrition.

Participatory Activity 8: Rank the top three methods you prefer to receive nutrition education.

The purpose of this participatory activity was to determine how the participants prefer to receive nutrition education. Having this information will help in the development of future materials that will be used for child care providers. The score preferences are listed in Table 4.12. Most of the participants prefer workshops or trainings (20.7%). Next, the providers prefer nutrition education kits (19.6%) and videos (16.8%). Learn at home newsletter series came in a close fourth place with 15.6%.

Table 4.12
Preferred methods of nutrition education

Education Methods	Total Points n (%)	Rank N=30
Workshops/Trainings	37 (20.7%)	1
Nutrition education kits	35 (19.6%)	2
Videos	30 (16.8%)	3
Learn at home newsletter series	28 (15.6%)	4
Brochures	18 (10.1%)	5
General nutrition newsletters	17 (9.5%)	6
On-line course	14 (7.8%)	7

Chapter V: Summary and Conclusions

The purpose of this research was to assess the knowledge, perceptions, and practices of child care providers with relation to the factors that cause childhood obesity. Triangulation of focus group discussions and participatory activities were used to collect the research data. This chapter summarizes the results and conclusions for this study related to the triangulation of methodologies, the six research questions, the study's limitations, and future recommendations.

Triangulation of Methodologies

Triangulation of qualitative and quantitative methodologies were used to gather data about the knowledge, perceptions, and practices of child care providers in Southwest Virginia. Triangulation of these methodologies worked well in this population of child care providers in order to obtain a rich source of data. The verbalization of the focus group questions and the visual participatory activities complemented one another in such a way that accurate data could be collected. Each session consisted of participants who were comfortable with verbalizing their concerns and others who shared little in the group discussions. The participatory activities provided a forum for the “non-talkers” in the group to share their knowledge or concerns. Different educational backgrounds were represented in the focus groups. The participatory activities were represented visually, which lent itself well to different educational backgrounds. These visual participatory activities also worked well in situations where the participants did not respond well to a focus group question. Also, when dealing with personal issues or knowledge based questions the participatory activities supplemented the focus group questions. Therefore, utilizing both quantitative and qualitative techniques gave the participants a safe place to share their knowledge, perceptions, and practices.

Research Question 1: What do child care providers perceive as the major health concerns of children?

One of the main focuses of this research was to determine what child care providers perceive as the major health concerns for children. One focus group question and one participatory activity were discussed and ranked, respectively, with regard to this research question. The participants were broadly asked to name some health concerns for preschool aged children. During the discussion the participants stated three major themes

(a) nutritional issues, (b) physical inactivity, and (c) illness. The participants chose poor eating habits, colds, and immunizations as the top three ranked choices in the participatory activity.

Nutritional issues such as junk food, picky eaters, nutrient content of food, and parents were main themes related to children's health concerns. Every group mentioned nutritional issues right from the start. This may be due to the fact that these focus groups were promoted as nutritional workshops or groups. Had the participants been blind to the nature of the research, then perhaps they would not have mentioned nutrition as quickly. Also, poor eating habits were the number one health concern for children among the child care providers in the participatory activity.

Getting enough physical activity was also a major concern. The child care providers noted in general, preschool aged children do not get enough physical activity. Some providers said that the children did not get enough exercise while in their care. Most of the providers stated that they felt the children did not get enough activity at home. The child care providers recognized physical inactivity as a health concern because of the ramifications of leading a sedentary lifestyle.

Illness was another major health concern. Child care providers worry about children catching colds. Some providers also worry that the children were not getting proper medical attention when they did catch colds. They worry about the children, but also that they will catch colds from the children. The participatory activity further exemplifies this concern. Colds were ranked second and immunization was third in the rankings for overall health concerns for preschoolers.

The child care providers' concerns were similar to the American Academy of Pediatrics' health concerns for children (2002). The American Academy of Pediatrics stated that nutrition, immunizations, illness, violence prevention, and injury prevention were health concerns for children (2002).

Overweight and obesity were mentioned as concerns by several providers. However, this was not a great concern of the overall group. Obesity and overweight tied for fourth place in the ranking participatory activity, suggesting that it is a health concern, but not a very immediate one.

Research Question 2: What are child care providers' perceptions related to childhood obesity?

Child care providers were asked about their perceptions of childhood obesity and if they thought overweight and obesity were a problem in preschoolers and to what degree it was a problem. None of the child care providers thought that childhood overweight was common in the children in their child care settings. Most of the groups stated that overweight and obesity were not a problem. They cited only maybe one case at the entire center per group. Early childhood (preschool age) overweight has not been well cited in the literature. However, childhood overweight and obesity has become a national epidemic in the United States (CDC, 2001).

It was not clear during the discussion of childhood overweight and obesity if the child care providers could properly identify overweight in a child. In one group a child care provider asked for a definition of overweight. Some participants seemed to have a hard time labeling a preschool aged child as overweight. Instead, they reasoned that the child still had “baby-fat” and had not grown out of it yet. Perhaps if the moderator had only used the word overweight in the questioning instead of overweight and obese, then the participants may have responded better to the question. It was hard to determine if the providers can accurately determine what overweight is in a preschool aged child.

On the other hand, the participants cited that it was common to see overweight among children in the community, especially in older children and teenagers. This perception is in agreement with the current research on childhood obesity prevalence. Research has shown that over the past twenty years the number of overweight children and teenagers has doubled (CDC, 2001). Their perception of adult obesity is also in keeping with the research. In 2000, the prevalence of obesity in adults in the United States was 19.8% (Mokdad et al., 2001). The participants stated that it was very common to see overweight in the parents of the children that they worked with. Knowing the prevalence of overweight and obesity in children, adolescents, and adults solidifies the need establish healthy practices in children while they are in early childhood.

All of the participants were in agreement about when something should be done about obesity in children. The child care providers felt that prevention is the best weapon in fighting overweight and obesity. The child care providers felt that teaching children

about the importance of eating right at an early age would set the stage for good eating habits and prevent obesity. The American Dietetic Association (ADA) stated that children will learn about food and nutrition through messages sent to them by their caregivers (1999). Therefore, child care providers are an avenue that children can use to learn about food and nutrition. Some participants also noted that parents play an integral role in establishing food preferences early in life. Birch and colleagues noted that parental interactions with feeding influences the preferences that children establish (2001).

Another topic mentioned by the child care providers was the clean plate theory. Some participants voiced their concerns over the practice of making children eat everything on their plate. The child care providers held views that were substantiated by current research. The research supports that a child who is told to clean his or her plate may learn to ignore their internal satiety clues and then as a result overeat (Birch et al., 2001).

The child care providers also identified the major factors of childhood obesity in the participatory ranking activity. The participants ranked poor eating habits, lack of time/lifestyle, television/computer games, and parents/role models as their top four factors that influence childhood obesity. These choices are also consistent with current findings that poor nutrition, physical inactivity, and poor role models are the major factors that lead to childhood overweight and obesity.

Research Question 3: What do child care providers perceive as the major nutrition concerns of children?

One of the focuses of this research was to determine what nutritional knowledge and concerns child care providers had about preschool aged children. Three focus group questions and three participatory activities were correlated to generate discussion and data on this topic.

The major themes from the nutrition concerns discussion were not eating enough vegetables, sugary foods at breakfast, picky eaters, junk food, parents, and lifestyles. The top four nutrition concerns in the ranking participatory activity were eating too much fast or convenience foods, not eating enough fruits and vegetables, not eating a variety of foods, and eating too many sugary foods/drinks.

During the discussion of nutrition concerns for preschoolers most participants cited not eating enough vegetables as a concern. Not eating enough fruits and vegetables was their second choice on the participatory ranking activity. Most providers said that eating fruit was not the problem, however, they could not get the children to eat many vegetables. One participant noted that she even tried to hide vegetables in casseroles dishes. Some participants cited creative ways in which to get their children to eat more vegetables. As research has shown, these participants were correct in their assessment that children do not eat enough fruits and vegetables. Less than 20% of children consume the recommended five servings of fruits and vegetables per day (Cullen et al., 2000).

Also, the participants cited breakfast as a major concern for children. The provider's felt that parents were not providing a nutritious breakfast for their children. Oretga and colleagues found that obese children have less satisfactory breakfast habits than do normal weight children (1998). Therefore, breakfast habits do play an integral role in the development of obesity.

The participants' top nutritional concern in the ranking participatory activity was too much fast or convenience foods. This supports the discussion themes of junk food and lifestyles. The participants felt that children eat too much junk food because they have such hectic schedules that they do not have time to eat healthy, rather they grab whatever they can find at the time. Convenience foods and/or junk food are high in calories and fat. Research has shown that only 30.6% of children under the age of five met the recommendation of 30% or lower calories from total fat. Further, only 19.1% of children under the age of five met the saturated fat recommendation of less than 10% of total calories (CSFII, 1994-96).

Also, the participants ranked too much sugary foods and drinks as their fourth nutritional concern. Children's diets are plagued with too much fat and sugar. In a study of two to nineteen year olds, 45% of calories came from discretionary sugar and fat (Birch L., 1999). Not many participants directly stated juice or sodas as a nutritional concern, however these drinks play heavily into the amount of sugar present in the diet and is associated with childhood obesity (Dennison et al, 1997). The participants also chose not eating a variety of foods as their third nutritional concern on the participatory activity. Most of the concerns that the participants expressed have been proven to be

factors or determinants for childhood obesity. The participants postulate that overweight and obesity are not problems for the children that they work with, however, if these nutritional practices are not corrected then these children are at risk for developing overweight and/or obesity in the future.

Many of the participants cited parents in the nutritional concerns discussion. Research has shown that parents influence the dietary choices of their children (Cullen et al., 2001). Many of the participants felt that the parents were not introducing foods at home and not offering nutritious food to their children, which made it difficult to get the children to eat healthy away from home. When offering explanations for why the children did not eat healthy the providers were quick to point out parental inadequacies. None of the providers mentioned possible ways in which they were to blame for the poor nutritional status of the children that they work with.

One of the themes discussed in the nutritional concerns discussion not related to childhood obesity was picky eaters. Some of the participants found it difficult to get their children to eat anything, much less vegetables. Once again, this tied back into the discussion with parents and introducing healthy foods at an early age.

Another important point about the nutritional concerns ranking activity was that eating too much was not a concern. None of the providers chose eating too much in the ranking activity. Conversely, obesity and overweight tied for their fourth overall health concern. The providers' felt that overweight was a concern, however, they did not chose eating too much as a nutritional concern in the participatory activity. Also, eating too much in general was not mentioned in the discussion. However, the participants did rank eating too much of certain foods or nutrients as nutrition concerns.

Two questions dealt with the types of snacks and beverages that the child care providers serve their children. Most of the participants mentioned healthy snacks and beverages such as milk, 100% juice, and water. Nutri-grain bars were a surprising choice for the preschoolers. Only one participant stated that she had served cookies, and only one participant admitted to serving her children soda. Most of the participants participated in the USDA meal program in which there are strict regulations on what they can serve their children. One participant alluded to altering the menus so that the children would eat what she fixed. It is possible that the providers serve other snacks and

beverages than what they represented here because of the fact that they are on the USDA program and do not want anyone to find out what they really serve.

Two participatory activities focused on general nutrition knowledge about recommended serving size and number of servings. These activities reflected a lack of knowledge about the Food Guide Pyramid. Only 33.3% correctly answered the serving size for peanut butter, 50% for crackers, 53% for cheese, 34.2% for juice, 17.2% for carrots, and 23.3% for apples. With the exception of crackers and cheese, the majority of participants could not look at different serving sizes and identify the correct portion size for a preschool aged child. This ability is very important. Often, people do not measure out portions when handing them to young children. It is important to be able to estimate what the correct portion size is based on visual observances. It is also important because by age five the amount that is served a child directly affects the amount that he or she eats. The larger amount of food offered to a five year old, the larger amount he or she consumes (Rolls et al., 2000). It is clear that the child care providers need more training on correct serving sizes for preschool aged children.

The other participatory activity dealt with the minimum number of suggested servings from the Food Guide Pyramid. For the vegetable group, 19.2% of participants chose the correct answer of three servings. In the fruit group, 31% of participants chose the correct answer of 2 servings. Only 7.4% chose the correct number of six servings of the bread group, which is alarming. Most participants (56.7%) identified the correct number of meat group servings as two. Most participants overestimated the number of milk group servings. Only 3.1% chose the correct answer of two. It is very obvious from this exercise that child care providers need basic instruction on the Food Guide Pyramid and serving recommendations and sizes. Previous focus groups have also found that caregivers lack knowledge about food portions and servings (Omar et al., 2001).

Ideally, these two participatory activities were to be conducted in private, ensuring that the participants did not see what each other were choosing for answers. However, due to time and space restraints, more than one participant had to complete an activity at one time. It was impossible to make sure that each participant did not see what another participant was choosing for answers. This could have biased the results,

however, the results showed that the participants lacked knowledge regarding these issues, so it is not as much of a factor.

Research Question 4: What physical activity concern do child care providers have for children in child care?

The researchers were interested in what role physical activity plays in child care and if child care providers are concerned about the amount of physical activity that children are getting. Most of the participants agreed that preschool aged children do not get enough physical activity. It has been found that preschool aged children who have low levels of physical activity gain more subcutaneous fat than active children and are at a greater risk for childhood obesity (Moore et al., 1995). The participants felt that children did not get enough activity because of time restraints and a lack of space for activity. Once again, the providers cited lifestyle as a reason why something was deficient. Television was mentioned in the physical activity concerns discussion as a reason why children did not get enough activity. Research shows that television viewing is a major factor in children being so inactive, which is a major risk factor for obesity (Gortmaker et al., 1996). The majority of participants said that the children in their care only spent between a half hour to an hour watching television during the week. The family day home providers stated that the children in their care watched television for longer periods. Since, in a family day home situation, there is only one provider present, the television becomes the “babysitter” for the children while the provider is preparing and cleaning up after meals. Of the videos that the children were allowed to watch, the providers mentioned educational videos and Disney movies.

The majority of participants stated that outdoor games or playgrounds were the most common form of physical activity for the children. This would seriously damper activity levels when it is cold or raining outside. Many participants shared that when they had to be inside that music, songs, and instruments were popular ways to get physical activity. The providers said that the children got up and moved and danced to the music. The providers also counted playing a musical instrument as physical activity.

Research Question 5: What kind of modeling occurs between the child and the child care provider?

The researchers wanted to know how the child care providers perceived their role in the well-being of the children they work with. Most all of the participants stated that they played a big role in the health/nutritional well-being of the children that they cared for. The providers stated that the children spend most of their waking hours in their care and often the providers see the children more than the parents do. Many providers said that they try to role model for the children by engaging in physical activity with them and eating and drinking what they consumed. Some providers also said that they have family style meals with the children in order to further teach them about nutrition. The ADA notes that child care providers can be positive role models for the children by having activities such as family style meals (ADA, 1999). When asked about how their own personal health habits influenced the children, the participants were divided. Some participants stated that the children were very aware of what they were doing and recognized that they need to be positive role models for the children. These participants further stated that the children pick up on their habits, good or bad. Some of the other participants stated that they did not have much influence over the children, even after they said that the children spent most of the day with them. These participants said that parents had the most influence over the children. Some of the participants said that the children really did not pay that much attention to what they were doing. The literature supports the point that child care providers are an important influence in the development of a child.

Most of the participants noted that parents are a major influence in the health and nutritional well-being of a child. Some of the participants felt strongly that parents have a greater influence over the children than they do as providers. Parental influence in health and nutrition is also well supported in the literature. Parents have the ability to influence dietary choices, such as fruit, vegetable, and juice intake (Cullen et al, 2001).

When asked about health or nutrition practices that they were trying to achieve in their own personal lives the participants chose getting regular exercise (18.0%) as their top choice. Dietary goals such as choosing more fruits and vegetables (15.7%) and eating a low-fat diet (12.2%) were among the top three. In this participatory activity the participants were supposed to rank the top three practices that they were currently trying

to achieve in their personal lives. Since child care providers are important role models for children it is important to know what kind of messages they are sending children about nutrition, exercise, and health. It is also important to note that many of the providers were overweight or obese themselves.

Research Question 6: How do child care providers incorporate and use nutrition education in the care of children ?

In order to develop new educational materials for child care providers it is essential to know what they are currently doing. Some participants stated that they did some small cooking or preparation activities with the children. Some participants also stated that they taught the Food Guide Pyramid to the children. Research has shown that child care centers can offer nutrition education and activities to promote good food choices in children (Drake, 1992). The ADA further stated that a child care facility can be the centerpiece for nutrition education (ADA, 1999). In order for child care providers to successfully teach nutrition concepts to their children, they first must be taught themselves. The final participatory activity asked participants which method the best liked to learn by. The child care providers chose workshops or trainings (20.7%), nutrition education kits (19.6%), and videos (16.8%) as their top three choices. For nutrition education to be successful it must be packaged in a way that most participants will accept it.

Overall Conclusions

Child care providers in Southwest Virginia need more developmentally appropriate nutrition programs. As discussion questions, participatory activities, and previous research with providers has shown child care providers lack sound nutrition knowledge. It is important that the providers have a solid base of nutrition principles in order to teach and be good role models for the children they work with. Also, it is important for child care providers to have nutrition knowledge because they feed children sometimes up to three meals and two snacks a day.

Within this programming the importance of the provider's role in a child's life should be stressed. Some of the participants in this study did not recognize themselves as potential positive role models for their children. Child care providers need to realize that

they play a crucial role in developing healthy habits in children because of the long hours children spend in their care and the bonds they develop.

It is also important to educate the parents on the vital roles that they play in the health of their children. Research shows that parents are key in establishing good nutrition and physical activity habits in their children. Also, these child care providers noted that parents are an integral component of a child's well-being. Parents are important role models in their children's lives. Lifestyle practices sometimes make it difficult for parents to be effective role models. Parents need strategies in which they can make good nutrition and exercise practices a part of the everyday schedule. Parents should be partners with child care providers to ensure that the proper messages about health are consistently being sent.

It is essential that children develop good eating and physical activity habits not only to lead a healthy life, but also to prevent obesity. The child care providers stated that overweight and obesity were not problems in their child care setting. However, the providers mentioned several concerns that are risk factors for childhood overweight and obesity. The providers further noted that prevention is the key in stopping childhood overweight and obesity. Both groups, child care providers and parents, need to be educated on the risk factors for childhood overweight and obesity and how to recognize these factors in children. Child care providers also need to be trained on how to recognize an overweight child. Further, providers need positive lessons and activities on how to combat childhood obesity.

Recommendations for Future Educational Programs

Child care providers and parents need developmentally appropriate nutrition education programs in order to effectively teach nutrition to their children and prevent childhood obesity. Programs need to start at a basic level with the Food Guide Pyramid. The programs should first focus on the groups of the Pyramid and the recommended servings for each food group. Then appropriate serving sizes for children should be addressed. To make the programs more applicable to childhood overweight and obesity, the topics of physical activity and role models also need to be incorporated into the

programs. Child care providers as well as parents need practical instruction and activities in which they can take back and apply in their interactions with the children.

The Virginia Cooperative Extension provides nutrition and health programming for families. Extension has the expertise to develop a variety of educational programs that would target child care providers, parents, and children. An integrated educational approach with a variety of tools may be utilized such as workshops, videos, and newsletters. This program would also be a collaboration among Extension Specialists and Agents. Outcome measurements would be recorded to determine the effectiveness of the program. Specifically a program could be implemented that included the following:

- Workshops for child care providers and parents on basic nutrition with lessons from the Food Guide Pyramid. Also, workshops emphasizing physical activity, positive role models, and childhood overweight prevention. In these workshops baseline information about the parents and providers' nutrition knowledge and lifestyle practices could be obtained. The families could also set goals for better health and nutrition.
- Providing the child care providers and parents with basic nutrition and physical activities that they could use in their child care setting or at home with the children. Also, providing the participants with practical snack ideas and recipes.
- Establishing a health/nutrition passport for the children. The passport would be an evaluation piece of the program. At baseline and at the end of the program the child's height, weight, food goals and any other pertinent family information would be collected. This passport would be updated at regular intervals and shared with the providers and parents.
- Each month for a year the parents and providers would receive a nutrition newsletter that focused on an area of the Food Guide Pyramid. The newsletter would also contain helpful hints for activities that the children would enjoy.
- At the end of one year the health/nutrition passport for children and parents would be evaluated to determine the successfulness. Success would be determined by how the children and families have changed their eating and physical activity habits and their risk factors for childhood overweight. Also,

success would be determined by how the providers and parents had become more positive role models for the children, by changing their habits and practices.

In this program, the child care provider and parents could be partners in creating a positive environment with respect to health and nutrition. The provider and parent could further identify problems or potential problems for the child.

Research Limitations

Several limitations occurred while conducting this research. An important limitation was a difficulty in obtaining participants for this study. Other limitations included time constraints, space, administration of participatory activities, factors affecting the focus group dynamics, and factors potentially affecting analysis of focus group sessions.

Obtaining Participants

The most important challenge of this research study was recruiting participants. Child care providers put in long hours in their day care settings and few want to have other commitments after work. Due to this fact, two of the groups were conducted during the day at the center, during the children's nap time, so the providers would not have to stay after work. At two of the groups, absent participants became a problem. Some participants were sent a recruitment letter in order to enlist their support. Two Virginia Cooperative Extension agents advertised the groups by telephone calls and by mentioning the focus groups in their programs. Reminder letters or phone calls were also part of the recruitment process. Methods for recruiting participants were exhausted. As a result, the participants that showed up were very cooperative and interested in the study. Some participants seemed apprehensive about the tape recorders at first, but were put at ease once it was explained that their names would not be attached to anything that was said in the group discussion.

Time Constraints

Time was another limitation to the study. For the two sessions that were held during the day, time was a major factor. The sessions could only last about an hour long to coincide with the children's naptime. For the other three sessions, time was also a

factor because the participants were giving of their free time, time that is usually spent with family. To be time efficient some of the participatory questions were moved to be conducted at the beginning of the session, when participants were getting something to eat. This helped to save time and get participants out in a timely fashion.

Administration of Participatory Activities

Two of the participatory activities (five and six) were initially supposed to be conducted in private. However, because of space and time constraints, this was not always possible. The activities were arranged so that one participant could go to a station at one time. Participants were broken up into two groups, with one group completing activities five and six at one time. The participants were told not to look at what other participants were choosing for answers, however there was no possible way to control for this. Also, in the other ranking activities, which were not conducted in private, participants may have been influenced by what other participants were choosing.

Factors Affecting Focus Group Dynamics

The first focus group was held in Stuart, Virginia and had a total of six participants. Thirteen participants were signed up to attend the group, but only six attended. All of the participants seemed to know one another, which factored in to the group's dynamic. The atmosphere was very comfortable and everyone freely gave their opinions. The participants were eager to share their concerns and to participate in the activities.

The second focus group was conducted in Giles County, Virginia. This group was conducted at during the day at the child care center. Seven providers participated. Time was a factor in this group, so if participants did not elaborate much on a topic after probes were introduced then the moderator moved on to the next question or activity. The participants were very cooperative. Five of the participants shared their opinions openly. Two of the participants were shy and did not interject much in the discussion.

The third focus group was held in Pulaski County, Virginia. This group had a disappointing turnout. The Extension agent involved in recruitment had planned on at least seven participants, however, only three showed up. This group had two dominant talkers. The other participant only commented when directly asked to. One of the participants tended to deviate from the subject on hand and it was difficult to get her back

on track. However, all three participants seemed willing to participate in the research and were interested in the activities.

The fourth focus group was held in Blacksburg, Virginia. This group had the greatest number of participants. Nine providers participated in the group. The center director was present at the session, however, this did not seem to bother the rest of the participants. Some of the participants were shy and minimally participated in the discussion. However, everyone was willing to participate in the activities.

The last focus group was held in Christiansburg, Virginia. This session was conducted during the day, while the children were in naptime, which made time critical. Once again, if much discussion was not generated on a particular question, then the moderator moved on to the next question or activity. Six providers participated in this session. Most of the providers participated in the discussion. Only one participant did not talk openly in the group.

Factors Influencing Data Analysis

One of two moderators conducted each focus group session. One of the moderators was present at all five groups as well as one assistant moderator, ensuring consistency. The moderator also did all of the transcriptions for the focus group discussions.

During the first group, the tape recorder was not turned on after the completion of the second participatory activity. The moderator realized this after three questions had been discussed. Therefore, no direct quotes were obtained from those three questions.

Due to the positioning of the tape recorders in the fourth group, some of the participant's voices are inaudible on the tapes, which made it difficult to transcribe what they had said.

Recommendations for Future Research

One recommendation for future research would be to conduct a similar study in other regions of Virginia. Child care providers in another part of the state may have different concerns, knowledge, and/or perceptions. For example, urbanized Northern Virginia may yield different results as compared to the rural setting of Southwest Virginia. Research studies such as focus groups could also be conducted during child

care provider in-service training days. This would be optimal because many providers need to have a certain number of hours of training. The focus groups could be held as one of the workshops at the training. This would limit the amount of recruitment needed. This method would also be easier to get a diverse sample of the providers in an area.

Since this population of child care providers were all Caucasian, it would be interesting to do a similarly designed study focusing on different racial and ethnic groups. Different racial and ethnic groups may have different practices, perceptions, and knowledge related to health, nutrition, and obesity.

More possibilities for research would be to do studies with the child care providers that were studied in this research. A knowledge based research study could be conducted with this population to determine if they really know what overweight is and if they know what to do about overweight in a child. A mailed out survey could be done in order to assess their current knowledge about childhood obesity and the risk factors associated with obesity. Also, the survey could focus on their current nutrition knowledge as well.

A further recommendation for research would be to do focus groups with parents that dealt with the same subject matter. It would be interesting to test their nutrition knowledge and perceptions of obesity. It would also be worthwhile to determine their attitudes towards nutrition and exercise. The focus groups could further explore how to best incorporate good eating and physical activity habits into their hectic lifestyles.

Another possibility for future research would be to determine the prevalence of childhood obesity in Southwest Virginia, and then for the whole state of Virginia. There is currently no data available on the prevalence of childhood obesity in Virginia. To effectively combat and prevent this disease officials need to know how big of a problem it is and where it is most prevalent.

Another possible recommendation would be to conduct evaluation research on applied nutrition and health practices. For example, if the proposed Extension program mentioned previously were implemented in Virginia, the pre and post nutrition and health practices could be evaluated.

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Appendix A

Focus Group Questions and Participatory Activities Correlated to Research Questions

PA 1: Demographics activity
RQ 1: What do child care providers perceive as the major health concerns of children?
FGQ 1: What do you feel are health concerns for preschoolers? PA 2: Rank the top three health concerns for preschoolers.
RQ 2: What are child care providers' perceptions related to childhood obesity?
FGQ 2: How common is it to see preschoolers that are overweight or obese?
FGQ 3: How common is it to see parents that are overweight?
FGQ 4: At what point should something be done about the poor eating habits of a child that could lead to overweight? PA 3: Rank the top three factors that influence childhood overweight.
RQ 3: What do child care providers perceive as the major nutrition concerns of children?
FGQ 5: What do you feel are the nutritional or eating concerns for preschoolers? PA 4: Rank the top three nutrition concerns for preschoolers.
FGQ 6: Describe the snacks you typically serve.
FGQ 7: What kind of beverages do you typically serve with snacks and/or meals? PA 5: Identify the portion sizes of selected foods and beverages. PA 6: Identify the correct number of servings from the food groups.
RQ 4: What physical activity concerns do child care providers have for children in child care?
FGQ 8: What do you feel are the physical activity concerns for preschoolers?
FGQ 9: Describe the physical activities children participate in while in day care.
FGQ 10: How is television used with children in your care?
RQ 5: What kind of modeling occurs between the child and the child care provider?
FGQ 11: What role do you see yourself having in the health/nutritional well-being of the children you work with?
FGQ 12: What influence do you see your own personal health practices having on the children you work with? PA 7: Which health/nutrition practices do you try to achieve in your personal life?
RQ 6: How do child care providers incorporate and use nutrition education in the care of children?
FGQ 13: Describe the nutrition activities children participate in while in your care. PA 8: Rank the top three methods you prefer to receive nutrition education.

Note: RQ = Research Question; FGQ = Focus Group Question; PA = Participatory Activity

Appendix B

Interview Guide for Focus Groups

Hello and welcome to our session. Thank you all for taking time to participate in our discussion. My name is Kimberly Coates and I will be the moderator today. This is Kathleen Stadler and Sarah Burkett, and they are here to represent the Virginia Cooperative Extension and the Department of Human Nutrition, Foods, and Exercise at Virginia Tech. They will be taking notes and helping with some of our activities.

We are interested in better understanding the knowledge, opinions, beliefs, and practices of child care providers as it relates to the nutritional well-being of children. We also would like to know the role childhood obesity plays in the child care setting. It is important that we also understand the ways you prefer to learn about things that may help you to perform better at work. We have invited you to participate in this session because we believe you can help us better understand these issues. The insight you provide us with will be useful for educators as they work to help child care providers improve their abilities to better perform their jobs.

Today, we will be using first names only. When we write up the reports generated by these sessions, we will omit names, so your name will not accompany your comments. Everything you say will be kept confidential. The tape recordings will only be used to prepare a summary of the sessions. The consent form you are about to sign ensures that we keep your identity confidential.

Today, we will be discussing your concerns regarding the health of children. Please answer honestly and remember that there are no right or wrong answers.

We encourage everyone to feel free to express yourself today. Each one of you have opinions and beliefs that are important for educators to know. We would like to learn about the issues you feel are most important. Please remember that it is ok to share your ideas even if they differ from the others in the group. Everyone's ideas are important, positive and negative comments.

It will be my job to ask questions and listen to the answers. I will not participate in the discussion. Feel free to talk to one another. Remember that it is important that we hear from everyone because you all have different beliefs, opinions, and experiences. If I see that someone has not said much, I may ask for your opinion, and if you are sharing a lot, I may ask to hear what the others have to say.

Please ask questions at any time. If you need a break, let us know. Are there any questions? Let's begin.

Let's start by introducing ourselves. Let's go around the table and give your first name, how long you've been a child care provider, and what type of facility you are from.

PA 1. Demographics. (Have participants place a card in the envelope that indicates their answer).

How long have you been a child care provider?

- | | | |
|-------------------------------------|------------------------------------|-------------------------------------|
| <input type="checkbox"/> < 1 year | <input type="checkbox"/> 1-2 years | <input type="checkbox"/> 3-4 years |
| <input type="checkbox"/> 5-6 years | <input type="checkbox"/> 7-8 years | <input type="checkbox"/> 9-10 years |
| <input type="checkbox"/> > 10 years | | |

What type of a facility do you work at?

- Child care center Family day home other

1. What do you feel are health concerns for preschoolers?

PA 2. Rank your top three health concerns for preschoolers. #1 is the top concern, #2 represents the second concern, and #3 is the last concern.

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> food allergies | <input type="checkbox"/> diabetes |
| <input type="checkbox"/> obesity/overweight | <input type="checkbox"/> colds |
| <input type="checkbox"/> asthma | <input type="checkbox"/> bronchitis |
| <input type="checkbox"/> ear infections | <input type="checkbox"/> malnutrition |
| <input type="checkbox"/> poor eating habits | <input type="checkbox"/> immunization |
| <input type="checkbox"/> safe/clean environment | <input type="checkbox"/> other |
| <input type="checkbox"/> air quality | |

2. How common is it to see preschoolers that are overweight or obese?

Probes: In your child care setting?
In young people?

3. How common is it to see parents that are overweight?

4. At what point should something be done about the poor eating habits of a child that could lead to overweight?

Probes: Before overweight starts?
After overweight starts?
Do nothing?

5. What do you feel are the nutritional or eating concerns for preschoolers?

PA 3. Rank your top three nutrition concerns for preschoolers. #1 is the top concern, #2 represents the second concern, and #3 is the last concern.

- | | |
|---|--|
| <input type="checkbox"/> not eating breakfast | <input type="checkbox"/> eating too much |
| <input type="checkbox"/> eating too little | <input type="checkbox"/> not eating enough fruits and vegetables |
| <input type="checkbox"/> not drinking enough milk | <input type="checkbox"/> eating too many snacks |
| <input type="checkbox"/> picky eaters | <input type="checkbox"/> eating too much sugary foods/drinks |

- | | |
|--|--|
| <input type="checkbox"/> eating too many fatty foods | <input type="checkbox"/> not drinking enough water |
| <input type="checkbox"/> not eating a variety of foods | <input type="checkbox"/> eating too much fast foods or convenience foods |

6. Describe the type of snacks you typically serve?

7. What kind of beverages do you typically serve with snacks and/or meals?

PA 4. Identify the portion sizes of selected foods and beverages.

Participants will place a card in the envelope under the food or beverage that illustrates the correct portion size.

PA 5. Identify the correct number of servings of a selected food group.

Participants will place a card in the envelope under the picture that illustrates the correct number of servings that is needed for a preschool aged child.

8. Describe the type of nutrition activities children participate in while in your care.

Probes: Where?

9. What do you feel are the physical activity concerns for preschoolers?

10. Describe the type of physical activities children participate in while in day care.

11. How is television used with children in your care?

Probes: How is the computer used at your day care?

PA 6. Rank the top 3 factors that influence childhood overweight.

- | | |
|---|--|
| <input type="checkbox"/> genetics | <input type="checkbox"/> parents/role models |
| <input type="checkbox"/> poor eating habits | <input type="checkbox"/> advertisements |
| <input type="checkbox"/> physical inactivity | <input type="checkbox"/> television/computer games |
| <input type="checkbox"/> family situation | <input type="checkbox"/> lack of time/lifestyle |
| <input type="checkbox"/> lack of skills and knowledge | |

12. What role do you see yourself having in the health/nutritional well-being of the children you work with?

Probes: What foods and beverages do you consume in front of the children?

Do you sit with the children at meals?

What kind of physical activities do you do in the presence of children?

13. What influence do you see your own personal health practices having on the children you work with?

PA 7. Rank the top 3 health/nutrition practices that you are currently trying to improve in your personal life.

- | | |
|---|--|
| <input type="checkbox"/> improving calcium intakes | <input type="checkbox"/> not smoking |
| <input type="checkbox"/> getting regular exercise | <input type="checkbox"/> choosing more fruits/vegetables |
| <input type="checkbox"/> eating a low-fat diet | <input type="checkbox"/> limiting sodas |
| <input type="checkbox"/> eating breakfast regularly | <input type="checkbox"/> limiting sugars |
| <input type="checkbox"/> limiting salt | <input type="checkbox"/> limiting high calorie snacks |
| <input type="checkbox"/> eating less cholesterol | <input type="checkbox"/> eating a variety of foods |

PA 8. Rank the top three methods you prefer to receive nutrition education. #1 is the top choice, #2 represents the second choice, and #3 is the last choice.

- | | |
|---|--|
| <input type="checkbox"/> workshops/trainings | <input type="checkbox"/> general nutrition newsletters |
| <input type="checkbox"/> nutrition education kits | <input type="checkbox"/> learn at home newsletter series |
| <input type="checkbox"/> videos | <input type="checkbox"/> brochures |
| <input type="checkbox"/> on-line course | |

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