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DR. ELLISE ADAMS

**IMPROVING NUTRITIONAL HABITS OF PRESCHOOLERS THROUGH
PARENT EDUCATION**

by

Lindsay E. Bridges, MSN, RN

A DNP PROJECT

**Submitted in partial fulfillment of the requirements for the
Degree of Doctor of Nursing Practice
to
The School of Graduate Studies
of
The University of Alabama in Huntsville**

HUNTSVILLE, ALABAMA

2019

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Jindsay Bridger 7/16/14

Student Signature

Date

DNP PROJECT APPROVAL FORM

Submitted by Lindsay E. Bridges, MSN, RN in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice and accepted on behalf of the Faculty of the School of Graduate Studies by the DNP project committee.

We, the undersigned members of the Graduate Faculty of The University of Alabama in Huntsville, certify that we have advised and/or supervised the candidate on the work described in this DNP project. We further certify that we have reviewed the DNP project manuscript and approve it in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

Elise D Adams 7.16.19 Committee Chair
(Date)

Elise D Adams DNP Program Coordinator

Karen Frith College of Nursing, Associate Dean for Graduate Programs

K Frith for Mark Adams College of Nursing, Dean

[Signature] Graduate Dean

ABSTRACT

The School of Graduate Studies

The University of Alabama in Huntsville

Degree: Doctor of Nursing Practice _____ College: Nursing

Name of Candidate: Lindsay E. Bridges, MSN, RN

Title: Improving Nutritional Habits of Preschoolers through Parent Education

The purpose of this project was to determine if there was an improvement in the nutritional habits of preschool children (age 0-5 years old) at a federally funded rural home visitation based preschool program in rural Alabama. The method used for this approach was to provide in home education to the parents and/or caregivers of the children by providing basic nutrition education with pre- and post-education survey evaluation. The results showed that the parents and/or caregivers demonstrated improved nutritional habits for the children and provided healthier food choices after the education was provided.

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Improving Nutrition Habits of Preschoolers through Parent Education

Identification of the Problem

Children have difficulty making healthy food choices and getting adequate physical activity when they are exposed to environments that do not support healthy habits (“Childhood Obesity Causes & Consequences,” 2016). According to Skelton et al. (2009), the rate of obesity has risen 300% since 1979. Although the trends are beginning to plateau, there are still great numbers of overweight and obese children in the nation. The Centers for Disease Control and Prevention’s National Center for Health Statistics reported that the prevalence of obesity among youth, ages two to nineteen, in the United States in 2015 – 2016 was 18.5%. The numbers showed a steady increase from preschool-aged children (2-5 years) at 13.9% through school aged children (6-11 years) at 18.4% and topped out at the highest rate being among adolescents (12-19 years) at 20.6%. According to the Centers for Disease Control and Prevention (2014), 16.3% of children aged 2-4 are obese and 16.5% are overweight in the state of Alabama.

The purpose of this project was to improve nutrition habits, leading to improved health and wellness, in a rural area of Alabama through an educational program provided to parents and/or caregivers of preschool children (age 0-5 years old), in a federally funded rural home visitation based preschool program. This assessment was based at a community level. The stakeholders include education providers and staff, healthcare providers and staff, clients, families, and caregivers. The budget is expected to be less than \$100 including time spent, as resources were provided by the primary investigator and self-budgeted with time being donated. The project is expected to take approximately sixteen weeks from

implementation through evaluation. Evaluation was based on feedback from survey evaluation from the parents and/or caregivers of pediatric clients.

Answering the PICO Question

In applying the findings and techniques from literature, a project was implemented to determine if interventions of nutritional education provided to parents and/or caregivers was beneficial in improving nutritional habits of preschool children, ages 0-5 years in age, in a rural community.

After surveying and providing education to 36 parents and/ or caregivers of over 45 children, this study showed that the children were provided with healthier food options and given a healthier nutritional environment, according to post-survey results.

Review of the Evidence

Methods

An electronic search of the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database was used to retrieve peer-reviewed research articles. Search terms of “pediatric”, “obesity”, and “parent involvement” were used to narrow search results along with limitations of publication year “2005-2017” and “peer-reviewed”.

Literature Review

There is growing evidence in support of parent-based interventions for managing pediatric obesity (Spence et al., 2017). Due to obesity having strong genetic susceptibility, parental weight status is a positive indicator of pediatric obesity risk (Berkowitz, Stallings, Maislin, & Stunkard, 2005; Faith et al., 2012).

Multiple studies provide pragmatic support for core behavior change strategies of family-based treatment with qualitative studies proving family-based treatments versus control treatments to be more efficient (Faith et al., 2012; Kitzmann et al., 2010; Snethen, Broome, & Cashin, 2006; Wilfley et al., 2007).

Wilfley et al. (2017) performed a study that provided observed support that specialized family-based and specialized treatment content designed to help families, including sessions with enhanced social facilitation maintenance, demonstrated better outcomes than control groups.

A study performed by Taylor, Wilson, Slater, and Mohr (2011) of 175 children between 7 and 11 years old found that parenting-style was highly responsible for supporting healthy behaviors and practices related to child weight. The study also found that child and parent reported parenting style practices were associated with the children's weight-related outcomes.

Low-income, ethnic minority youth are shown to have high rates of obesity-related morbidity (Dawson-McClure et al., 2014). For this group, obesity prevention is imperative. A study by Dawson-McClure et al. (2014) used an advanced approach in preschool students of low-income communities by promoting parenting and child behavior regulation. The study found that with intervention by education and improving foundational parenting practices, child physical activity and nutrition knowledge increased, and the amount of time spent watching television decreased.

Conceptual Framework

Social Cognitive Theory

The Social Cognitive Theory, or self-efficacy theory, explains human behaviors using concepts of outcome potentials and self-sufficiency (Bandura, 1986). The expectations of this theory are focused on the individual's belief in his or her own capacity to carry out health promoting, context-specific behaviors. According to the theory, the four factors that influence an individual's cognitive judgement of self-efficacy are: their own mastery experience; verbal persuasion; vicarious experience; and physiological and affective cues (Polit & Beck, 2017).

The United States Preventive Services Task Force (USPSTF) recommends behavioral interventions to improve weight status in pediatric clients (Barton, 2010). Research has shown that the implementation of behavioral and cognitive interventions simultaneously are effective in treatment of pediatric obesity (Herrera E.A., Johnston C.A., & Steele RG, 2004). A systematic review by Whitlock et al. (2010) found that cognitive interventions are often included in behavioral therapy for effectiveness of outcomes.

Methodology

Population

Parents and/or caregivers of children in the Marshall County Home Visitation Program (MVP) received the education provided during this project. MVP is a federally funded program, free to parents, that provides services from pregnancy to children through age five. The goal of MVP is to provide in-home services for parents to learn to be their child's "first teacher". MVP provides certified educators, health screenings, resource aids,

and monitoring child development. The project goal is to assess and educate 35 parents and/or caregivers to improve the nutrition habits of their children.

Quality Improvement Delivery

After obtaining Institutional Review Board (IRB), school board, and school system approval, the principal investigator began implementation of the QI project. Each parent and/or caregiver was greeted and introduced to the QI project using the attached script (Appendix B). Consent was obtained from each participant on a volunteer basis. Prior to any educational session, a slightly modified version of the School Physical Activity and Nutrition survey (SPANS) 20-question survey (Appendix C) was given to each parent and/or caregiver for the QI research purposes. After consent was obtained and the SPANS was completed, a basic nutritional and lifestyle education session was provided. The education sessions lasted an average of 50 minutes, including time to complete the survey and time to answer questions from the parents/caregivers. A basic nutrition label and Daily Nutrition Goals were used as a guide to teach basic interpretation of the label, appropriate serving sizes, caloric needs, sugar content, and protein content. Additional information included making healthy food choices and nutritional information of meals prepared versus frozen or pre-packaged similar meals to demonstrate the importance of consuming freshly prepared meals. A portion of the didactic session also included some local budget friendly meal planning and the question/answer session for the parents and/or caregivers. A follow up, face-to-face, SPANS survey was administered approximately 6 weeks post-intervention for each parent/caregiver.

Aim and Scope of Journal

Comprehensive Child and Adolescent Nursing is an international peer-reviewed journal that contributes to the knowledge base of healthcare professionals caring for children in all healthcare settings. The journal welcomes topics including descriptions of processes and projects that have translated evidence-based knowledge into practice, measurement of healthcare outcomes, qualitative and quantitative research, and systematic reviews.

Improving nutritional habits of preschoolers through parent education

Improving nutritional habits of preschoolers through parent education

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The author graduated with an associate's degree in nursing from Snead State Community College in 2008, bachelor's degree in nursing from Jacksonville State University in 2010, an associate's in business from Snead State Community College, also in 2010, and master's degree in community health nursing with a graduate certificate in nursing education from Jacksonville State University in 2012. The author will graduate from the DNP program at The University of Alabama in Huntsville in August 2019. Research interests include rural pediatric health and nutrition, improving nursing education, and improving patient education.

Improving nutritional habits of preschoolers through parent education

The purpose of this project was to determine if there was an improvement in the nutritional habits of preschool children (age 0-5 years old) at a federally funded rural home visitation based preschool program in rural Alabama. The method used for this approach was to provide in home education to the parents and/or caregivers of the children by providing basic nutrition education with pre- and post-education survey evaluation. The results showed that the parents and/or caregivers demonstrated improved nutritional habits for the children and provided healthier food choices after the education was provided.

Keywords: pediatric obesity, pediatric parental education, childhood obesity, improved childhood nutrition.

Children have difficulty making healthy food choices and getting adequate physical activity when they are exposed to environments that do not support healthy habits (“Childhood Obesity Causes & Consequences,” 2016). According to Skelton et al. (2009), the rate of obesity has risen 300% since 1979. Although the trends are beginning to plateau, there are still great numbers of overweight and obese children in the nation. The Centers for Disease Control and Prevention’s National Center for Health Statistics reported that the prevalence of obesity among youth, ages two to nineteen, in the United States in 2015 – 2016 was 18.5%. The numbers showed a steady increase from preschool-aged children (2-5years) at 13.9% through school aged children (6-11 years) at 18.4% and topped out at the highest rate being among adolescents (12-19 years) at

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Methods

Recruitment

Thirty-six parents and/or caregivers of children aged 0-5 years, who were in the Marshall County Home Visitation Program (MVP) were recruited for this project. Participants could be any age, sex, or race/ethnicity. They were required to be able to read, understand, and speak English. The project coordinator had no official relationship or association with MVP and was officially authorized by the Director of Federal Programs for the Marshall County Board of Education to accompany MVP staff on home visits in a letter of support. MVP is a federally

funded program, free to parents, that provides services from pregnancy to children through age five. The goal of MVP is to provide in-home services for parents to learn to be their child's "first teacher". MVP provides certified educators, health screenings, resource aids, and monitoring child development. The clinical area covered is approximately 560 square miles within Marshall County, Alabama. The project coordinator travelled approximately 1080 total miles during the recruitment, intervention, and follow-up survey process of the project.

Instrument: The School Physical Activity and Nutrition Survey (SPANS)

The School Physical Activity and Nutrition Survey (SPANS) is a cross-sectional survey tool used to measure a range of health behaviors in children. Versions of the SPANS are used internationally for research and program development in improving children's health. The tool is primarily used for school-aged children; therefore, it was modified for this project to target the preschool population. The modifications of the tool were made to include removing questions that were specific to school-aged children and making the questionnaire appropriate to be answered by the parents/caregivers rather than the children (Hardy, Mihrshahi, Drayton, & Bauman, 2017).

Upon the start of the home visit by the MVP staff member, an introduction by the project coordinator using the attached script (Appendix B), was given. The parent and/or caregivers were offered the opportunity to participate and if consent was given, the modified version of the School Physical Activity and Nutrition survey (SPANS) in either paper or electronic form, as per individual preference, was administered prior to the educational intervention.

Intervention: Education

After consent was obtained and the SPANS was completed, a basic nutritional and lifestyle education session was provided. The education sessions lasted an average of 50 minutes, including time to complete the SPANS and time to answer questions from the parents/caregivers. A basic nutrition label and Daily Nutrition Goals were used as a guide to teach basic interpretation of the label, appropriate serving sizes, making healthy food choices and nutritional information of meals prepared versus frozen or pre-packaged similar meals to demonstrate the importance of consuming freshly prepared meals. A portion of the didactic session also included budget friendly meal planning and the question/answer session for the parents and/or caregivers. A follow up, face-to-face, SPANS was administered approximately 6 weeks post-intervention for each parent/caregiver.

Results

Thirty-six parents and/or caregivers participated in the teaching project (Figure 1). These parents and/or caregivers were caring for a total of 69 children from ages 0 to 18 years old, and 42 of those children being between 0 and 4 years old (Figure 2). To be eligible for the project, at least one of their children had to be between the ages of 0 and 5 years of age. The results showed that the parents and/or caregivers demonstrated improved nutritional habits for the children and provided healthier food choices for their children after the nutritional education was provided.

SPANS results, when compared before and after the educational intervention showed a 25% increase in the number of parents and/or caregivers who started serving fresh or frozen fruits served as snacks in the home at least 1 to 2 days per week. Initially, 47.2% (n=17) of parents and/or caregivers reported that they had “Never” served fresh or frozen fruit in the home in the preceding week. Following the intervention, this number dropped to 22.2% (n=8). Prior to the

intervention, 52.8% of (n=19) of parents and/or caregivers reported they only served fruit 1 to 4 times per week. Following the intervention, 77.8% (n=28) reported serving fruit 1 to 5 times per week (Figure 3).

There was also an increase in parent and/or caregiver knowledge of the amount of fruits and vegetables their children should be served each day. Prior to the educational intervention, only 28% (n=10) of parents and/or caregivers were aware of how many cups of fruit their children should consume each day. After the educational session, 94% (n=34) parents and/or caregivers could recall the correct amount of fruits the children should consume (Figure 4). Similar results were shown in the knowledge of the amount of vegetables to be consumed. Pre-education data indicated that only 8% (n=3) parents and/or caregivers were aware of how many cups of vegetables their children should consume each day. After the educational session, 92% (n=33) parents and/or caregivers understood the amount of vegetables that should be served to the children each day (Figure 5).

There was also a drastic decrease in the amount of sugar-sweetened cereals that were served during breakfast. Before the intervention, 38.9% of parents and/or caregivers (n=14) were serving their children sugar-sweetened cereals for breakfast 5 to 6 times per week. However, after the intervention this number decreased to 19.4% (n=7). Similarly, there was a 9% decrease in the number of parents (n=3) who were serving these cereals to their children 7 times per week, and the number of parents and/or caregivers (n=5) who stopped serving sugar-sweetened cereals altogether increased 13.9% (Figure 6).

Improvements were also shown in nutritional and family environments. Results from the SPAN administered prior to the educational intervention identified only 13.9% (n=5) of parents and/or

caregivers refrained from watching television while eating an evening meal. While many of the families continued to engage in television watching while enjoying an evening meal following the intervention, the numbers changed drastically. Before the intervention, 22.2% of families (n=8) were engaging in watching television 5 to 7 times each week, while the Post-Education results show this number decrease to a mere 2.8% (n=1). The number of parents and/or caregivers who refrained from watching television during the evening mealtime after the education project rose to 33.3% (n=12) (Figure 7).

Implications and Conclusions

During the survey administration, educational intervention, and question and answer sessions, many parents and/or caregivers verbally reported that they were unaware of much of the information shared. One hundred percent of parents surveyed answered “Yes” to the Post-Education survey question “Do you feel this information has been helpful?”.

Although this project had a small population group (n=36), it can be deducted that education of parents and/or caregivers is beneficial in improving nutritional habits of children through education of those caring for them, especially in rural populations.

Sustainability

In collaboration with the project manager, the Marshall County Home Visitation Program established new educational programs and materials for parental education that were presented at the 2018-2019 end of the school year Parents Day event, in which more than 120 parents attended and gained knowledge about Childhood Nutrition. The Marshall County Board of

Education has also hired two new English as Second Language translators to translate and present the new educational materials to the non-English speaking parents and caregivers of MVP.

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Figure 7. Comparative Chart: Television Engagement During Evening Meal

Figure 1. Parent and/or Caregiver Relationship

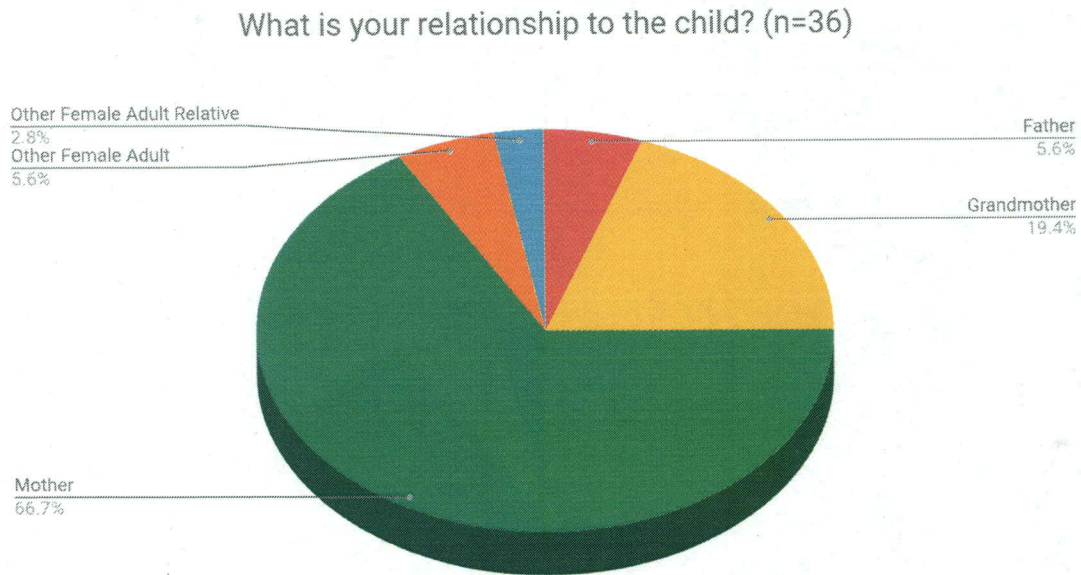


Figure 2. Demographic of Children per Household

Number of Children Per Household by Age (n=69)

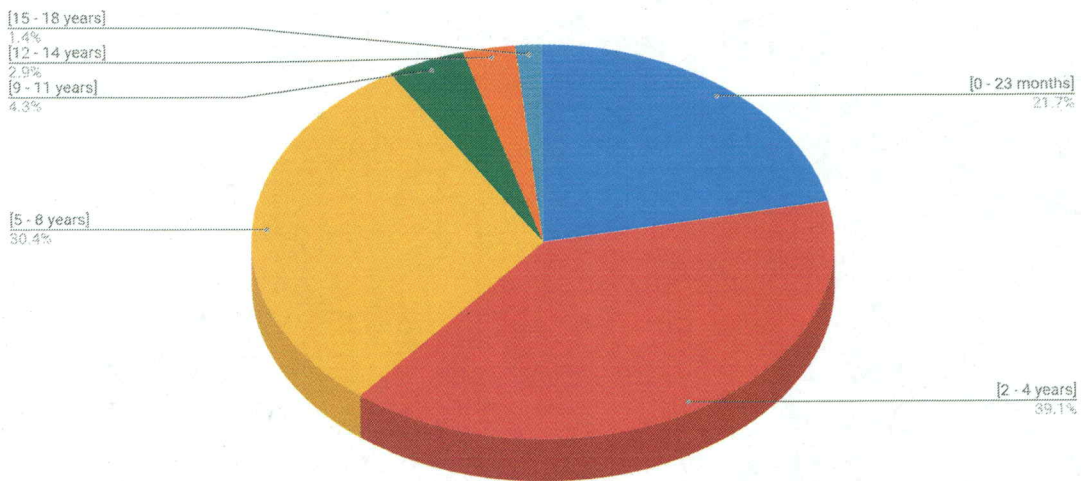


Figure 3. Comparative Chart: Fresh/Frozen Fruits Served as Snacks

During the past 7 days, how many times were fresh/frozen fruits served as snacks in your home? (n=36)

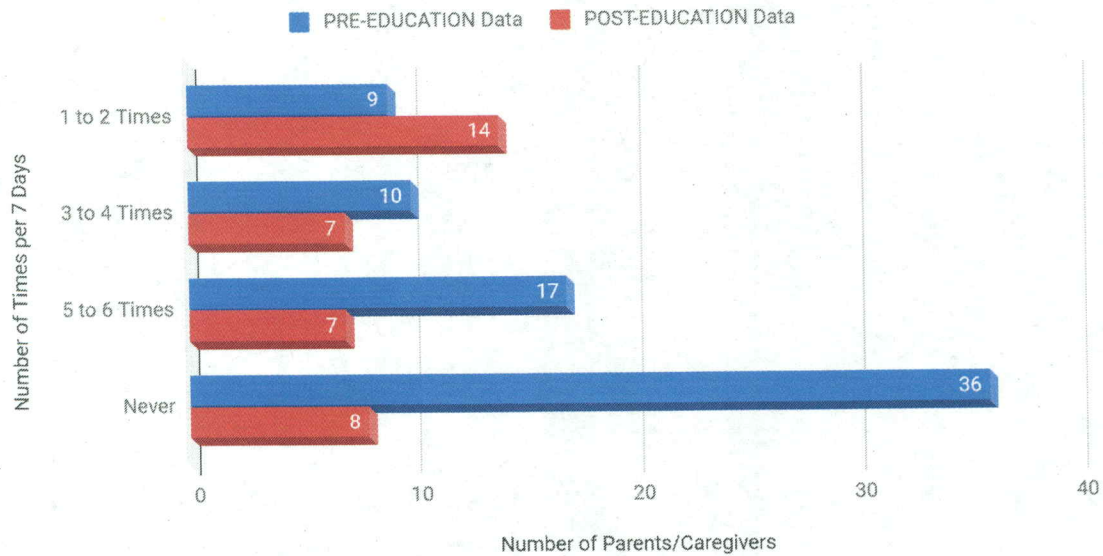


Figure 4. Comparative Chart: Cups of Fruit Consumed per Day

How many total cups of fruits should your child eat each day? (n=36)

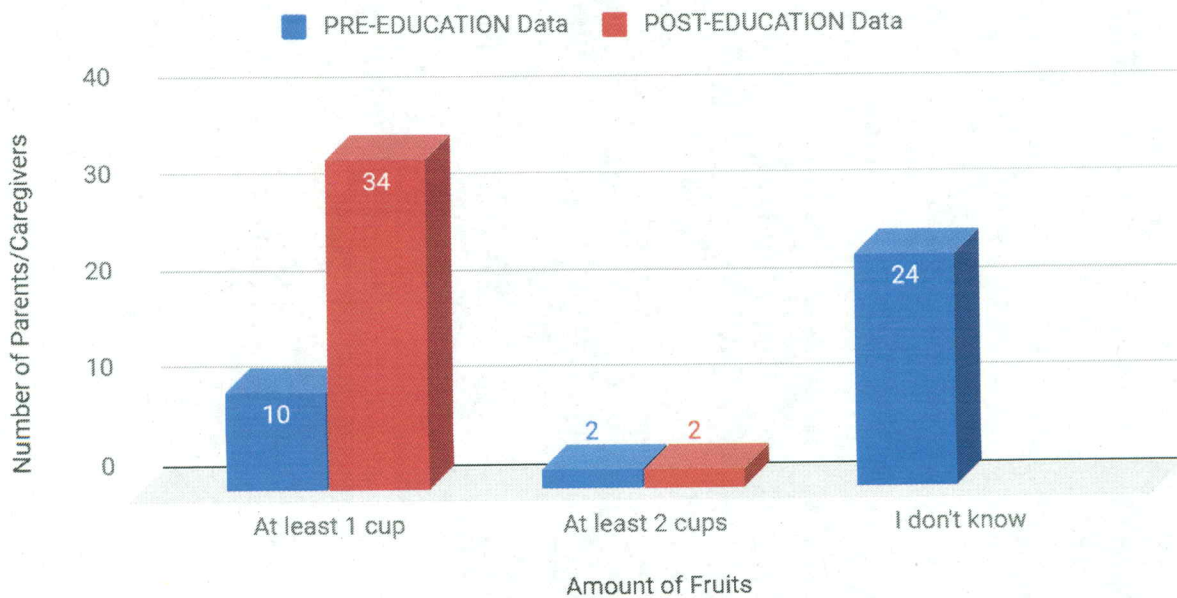


Figure 5. Comparative Chart: Cups of Vegetables Consumed per Day

How many total cups of vegetables should your child eat each day? (n=36)

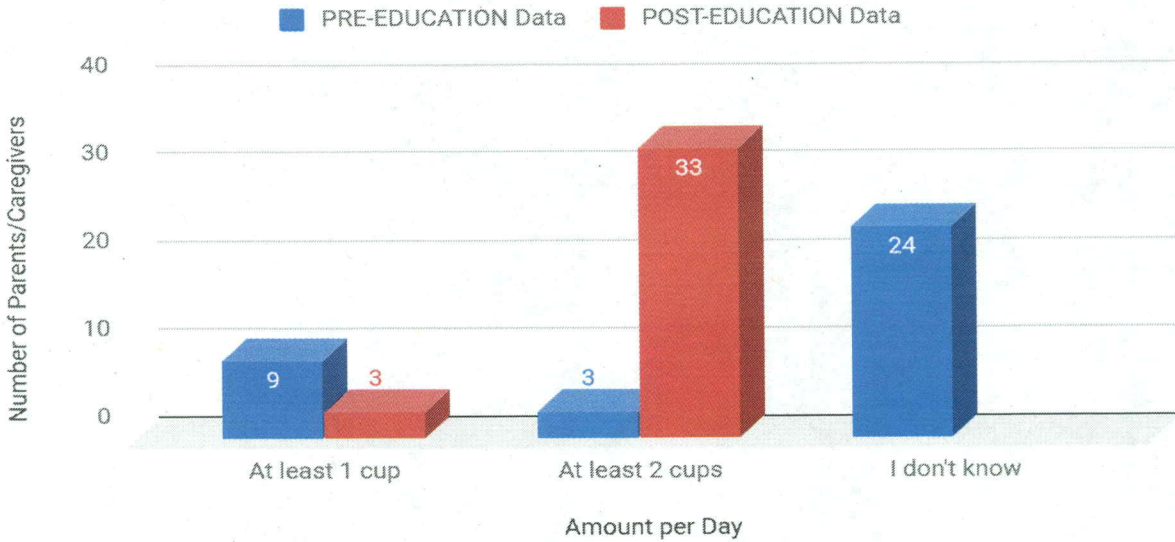


Figure 6. Comparative Chart: Sugar-Sweetened Cereals Served at Breakfast

During the past 7 days, how many times were sugar-sweetened cereals served at breakfast in your home? (n=36)

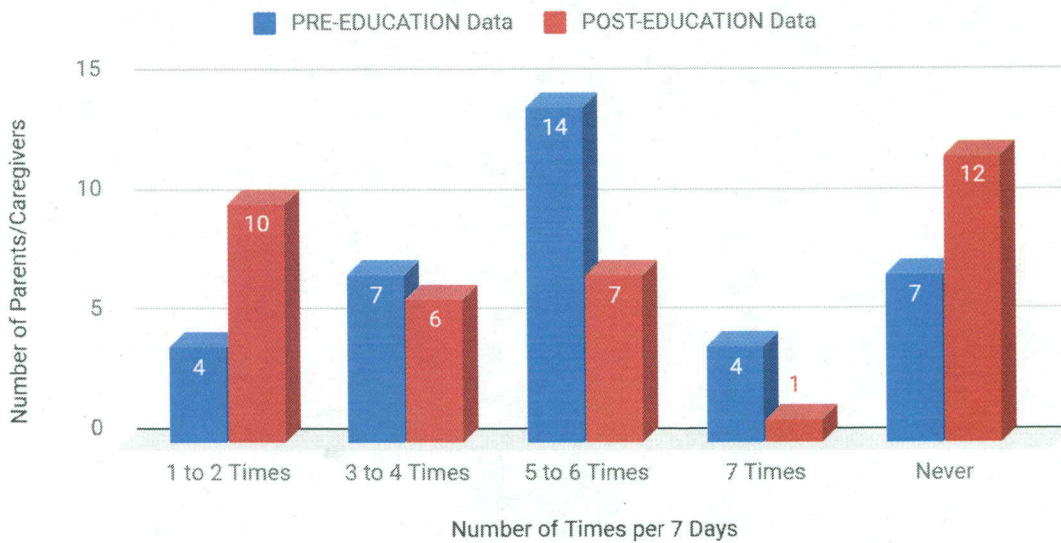
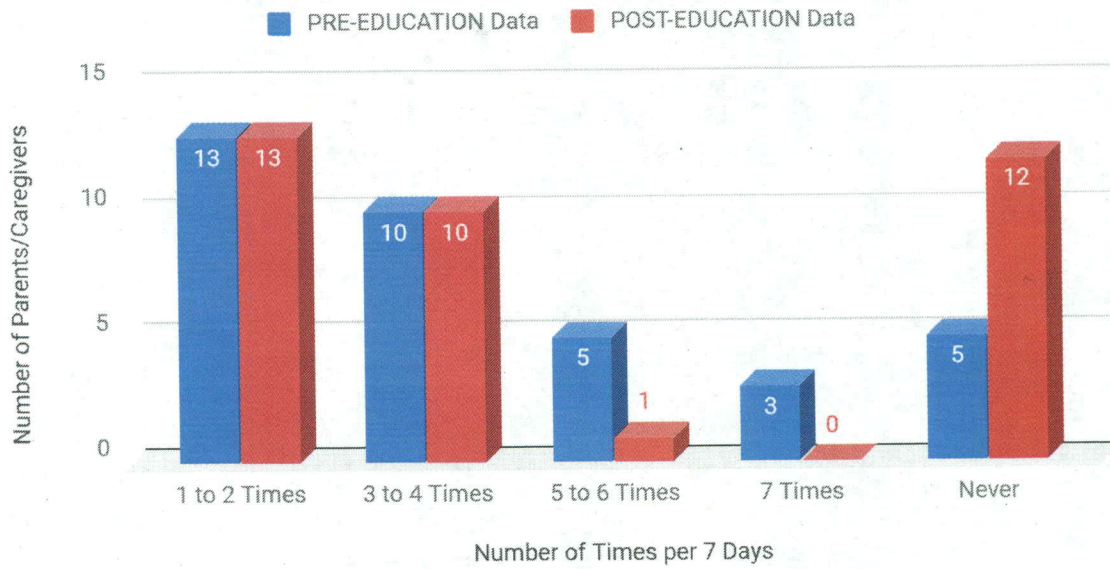


Figure 7. Comparative Chart: Television Engagement During Evening Meal

During the past 7 days, how many times did you watch TV while eating an evening meal? (n=36)



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APPENDIX A

Instructions for authors

Thank you for choosing to submit your paper to us. These instructions will ensure we have everything required so your paper can move through peer review, production and publication smoothly. Please take the time to read and follow them as closely as possible, as doing so will ensure your paper matches the journal's requirements. For general guidance on the publication process at Taylor & Francis please visit our Author Services website.

Author Services

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Comprehensive Child and Adolescent Nursing is an international refereed journal that contributes to the knowledge base of children's nurses and other health care professionals who care for children. Content topics appropriate for the journal include those related to all aspects of knowledge translation (evidence-based practice) into child health care practice. This includes original quantitative and qualitative research; systematic reviews of the literature; descriptions of processes/projects that successfully translated knowledge into practice, including descriptions of quality assurance and performance improvement strategies; and measurement of healthcare outcomes. In addition, manuscripts related to child health care policy, organizational management, and ethics will be considered.

Vision: The vision of Comprehensive Child and Adolescent Nursing is to be the foremost journal related to evidence-based healthcare for children and young people .

General Guidelines

All submissions should be made online at Comprehensive Child and Adolescent Nursing 's ScholarOne Manuscripts site: <http://mc.manuscriptcentral.com/ucpn>

Please write clearly and concisely, stating your objectives clearly and defining your terms. Your arguments should be substantiated with well-reasoned supporting evidence.

In writing your paper, you are encouraged to review articles in the area you are addressing which have been previously published in the Journal, and where you feel appropriate, to reference them. This will enhance context, coherence, and continuity for our readers.

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Original research reports Service evaluations.

Critical reviews of the literature

Evidence based reports of clinical developments

Theoretical or philosophical debate Pedagogical innovation

Manuscripts should be compiled in the following order where appropriate : Title page; Abstract; Introduction; Methods; Results; Discussion; Acknowledgments; Declaration of Interest statement; appendices (as appropriate); References; Tables with captions (on separate pages); figures; figure captions (as a list). Each section should begin on a new page. Other subsection headings within the main headings may be used but should be limited. The first page should include: title, first and last name of the authors and their affiliations, short title (no more than 20 letters), key words (4-5), and the address for correspondence, including telephone and fax numbers.

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Typically, manuscripts should range in length from 3000-5000 words (not including reference list).

Manuscripts must be accompanied by a cover page and an abstract that does not exceed 350 words. Refer to the manual for specifications regarding the cover page, running heads, short title, page numbering, abstract, tables/figures, and references.

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Appendix B

Script

"I am Lindsay Bridges and I am a Doctorate in Nursing Practice Student doing a research study. This study is working with parents/guardians of preschool-aged students to talk about Nutrition. MVP has agreed to allow me to come along with them on their home visits and incorporate the nutrition education in with your visit today. Your participation in the study is voluntary. If you would like to participate, I have a survey for you to complete. If you don't want to participate in the study, I will still share the nutrition information with you if you'd like."

If agreement is made for the study:

"I am going to provide you with some information about reading food labels and the recommended amounts of nutrients your child/children should receive each day. I will also include some tips for how to get these amounts in every day and ways to keep from going over the recommended amounts."

Appendix C

Improving Nutritional Habits of Preschoolers through Parent Education Child Physical Activity and Nutrition Survey Pre-Intervention

You are invited to participate in a research study about improving the nutritional habits of preschool age children by educating parents and caregivers. I would like to ask you to take part by filling out this survey, which takes about 15 minutes. This will help us to better understand the health and wellness of children in our community.

The child's primary caregiver should complete the survey.

The survey asks questions about your child's and your own physical activity (exercise), eating habits, and your household. There are no right or wrong answers. Participation is voluntary.

After you complete the survey, this page with your initials and address will be removed and kept confidential. Only a number will be used to identify you.

The information collected is private and will be kept in a secure location. It will be available only to researchers and their staff. At the end of the project it will be destroyed.

The results of the study may be published.

You can skip a question if you do not want to answer it, and you may stop answering questions or taking part in this project at any time.

There is no risk for filling out the survey. The results of this study may be beneficial in identifying how early education to parents and caregivers can improve nutrition in preschoolers and improve preschool program education.

By filling out the survey, you agree to participate in the study. You will be contacted in a few weeks to complete a follow-up survey as well. You may choose to withdraw from this project/study at any time.

If you have any questions about this research project, please contact Lindsay Bridges, MSN, RN,

Primary Investigator, (256-738-2860).

Thank you for considering taking part in this project!

Parent and/or caregiver Initials: _____

Address: _____

- 1. What is your relationship to the child?**
- Mother
 - Grandmother
 - Other female adult - related to child
 - Other female adult - not related to child
 - Father
 - Grandfather
 - Other male adult - related to child
 - Other male adult - not related to child

2. How many children live in your household?

Fill in one for each age range	0	1	2	3 or more
a. 0 - 23 months				
b. 2 - 4 years				
c. 5 - 8 years				
d. 9 - 11 years				
e. 12 - 14 years				

f. 15 - 18 years				
------------------	--	--	--	--

3. On most days what does your child do when she or he *has a choice* about how to spend leisure/free time?
- Almost always chooses activities like TV, reading, listening to music, computers, or video games
 - Usually chooses activities like TV, reading, listening to music, computers, or video games
 - Just as likely to choose active as inactive activities
 - Usually chooses activities like bicycling, dancing, outdoor games, or active sports
 - Almost always chooses activities like bicycling, dancing, outdoor games, or active sports
4. If the weather is good, I encourage my child to play outside.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree
5. Most of the time, does your child play outdoors for *at least 30 minutes per day*?
DO NOT COUNT outdoor play during school hours.
- No
 - Yes
 - I don't know
6. My child does enough physical activity to maintain good health and fitness.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree
7. It is safe for my child to play in our neighborhood with other children without adult supervision.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree

8. On most school days how many hours **per day** does your child spend on the computer/tablet (surfing the Internet, instant messaging, playing computer games), watching TV, and playing video games when **away from school**?

- My child doesn't do any of the above activities
- Less than 1 hour
- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours
- 6 hours or more

9. Are **you** physically active?

- Never
- Yes, some of the time
- Yes, most of the time
- Yes, all of the time
- I have a disability or health condition that prevents me from being physically active

10. I am physically active with my child. (**Examples:** running, jogging, walking fast, bike riding, swimming, dancing, or skating)

- Never
- Yes, some of the time
- Yes, most of the time
- Yes, all of the time
- My child has a disability or health condition that prevents him/her from being physically active
- I have a disability or health condition that prevents me from being physically active

11. I watch my child when he/she is being physically active.

- Never
- Yes, some of the time
- Yes, most of the time
- Yes, all of the time
- My child has a disability or health condition that prevents him/her from being physically active

12. During the past 7 days, how many times:

Fill in <i>one</i> answer for each question	Never	1 to 2 Times	3 to 4 Times	5 to 6 Times	7 Times	More than 7 Times
a. Did you eat breakfast?						

b. Did you eat an evening meal together with your child?						
c. Did you watch TV while eating an evening meal?						
d. Did your child help you prepare an evening meal?						
e. Did you eat a meal from a sit-down or fast food restaurant?						
f. Were fresh/frozen fruits served as snacks in your home?						
g. Were fresh/frozen vegetables served at the evening meal in your home?						
h. Was skim or non-fat milk served at meals or snacks in your home?						
i. Was 100% whole-wheat or wholegrain bread or tortillas served at meals in your home?						
j. Was sugar-sweetened cereals (Frosted Flakes®, Fruit Loops®, Cocoa Pebbles®, etc.) served at breakfast in your home?						
k. Were sugar-sweetened drinks served at the evening meal in your home?						

13. How often do you buy/receive fruits or vegetables from:

Fill in <i>one</i> answer for each location	All of the time	Most of the time	Some of the time	Never
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a. A large chain grocery store or supermarket (such as Publix)?				
b. A natural or organic supermarket (such as Whole Foods Market)?				
c. A small local store or corner store?				
d. A convenience store (such as 7-Eleven or mini market)?				
e. A warehouse club store (such as Sam's Club or Costco)?				
f. A discount superstore (such as Wal-Mart)?				
g. An ethnic market?				
h. A farmer's market/co-op?				
i. A food bank/pantry?				
j. Your own garden?				

14. Which of the following are you trying to do about your weight?

- Lose weight
- Gain weight
- Stay the same weight
- I am not trying to do anything about my weight

15. If I am overweight, I am more likely to have more health problems like cancer or heart disease.

- True
- False
- I don't know

16. How many total cups of **fruits** should your child eat each day?

- At least 1

- At least 2
- At least 3
- At least 4
- I don't know

17. How many total cups of **vegetables** should your child eat each day?

- At least 1
- At least 2
- At least 3
- At least 4
- I don't know

18. Experts recommend that children should be physically active for at least how many **minutes per day**?

- 10 minutes
- 20 minutes
- 30 minutes
- 60 minutes
- 90 minutes
- I don't know

19. Experts recommend that children engage in no more than how many hours of media-related activities, such as TV watching and video game playing, **per day**?

- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours
- I don't know

20. Experts recommend that children should be physically active on how many **days per week**?

- 0 days
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
- I don't know

Appendix D

Improving Nutritional Habits of Preschoolers through Parent Education

Child Physical Activity and Nutrition Survey Post-Intervention

You are invited to participate in a research study about improving the nutritional habits of preschool age children by educating parents and caregivers. I would like to ask you to take part by filling out this survey, which takes about 15 minutes. This will help us to better understand the health and wellness of children in our community.

The child's primary caregiver should complete the survey.

The survey asks questions about your child's and your own physical activity (exercise), eating habits, and your household. There are no right or wrong answers. Participation is voluntary.

After you complete the survey, this page with your initials and address will be removed and kept confidential. Only a number will be used to identify you.

The information collected is private and will be kept in a secure location. It will be available only to researchers and their staff. At the end of the project it will be destroyed.

The results of the study may be published.

You can skip a question if you do not want to answer it, and you may stop answering questions or taking part in this project at any time.

There is no risk for filling out the survey. The results of this study may be beneficial in identifying how early education to parents and caregivers can improve nutrition in preschoolers and improve preschool program education.

By filling out the survey, you agree to participate in the study. You will be contacted in a few weeks to complete a follow-up survey as well. You may choose to withdraw from this project/study at any time.

If you have any questions about this research project, please contact Lindsay Bridges, MSN, RN, Primary Investigator, (256-738-2860).

Thank you for considering taking part in this project!

Parent and/or caregiver Initials: _____

Address: _____

1. Do you feel the nutritional information you received was helpful to you in caring for your Preschooler?
 - Yes
 - No

2. What is your relationship to the child?
 - Mother
 - Grandmother
 - Other female adult - related to child
 - Other female adult - not related to child
 - Father
 - Grandfather
 - Other male adult - related to child
 - Other male adult - not related to child

3. How many children live in your household?

Fill in one for each age range	0	1	2	3 or more
a. 0 - 23 months				
b. 2 - 4 years				
c. 5 - 8 years				
d. 9 - 11 years				
e. 12 - 14 years				
f. 15 - 18 years				

4. On most days what does your child do when she or he *has a choice* about how to spend leisure/free time?
- Almost always chooses activities like TV, reading, listening to music, computers, or video games
 - Usually chooses activities like TV, reading, listening to music, computers, or video games
 - Just as likely to choose active as inactive activities
 - Usually chooses activities like bicycling, dancing, outdoor games, or active sports
 - Almost always chooses activities like bicycling, dancing, outdoor games, or active sports
5. If the weather is good, I encourage my child to play outside.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree
6. Most of the time, does your child play outdoors for *at least 30 minutes per day*?
DO NOT COUNT outdoor play during school hours.
- No
 - Yes
 - I don't know
7. My child does enough physical activity to maintain good health and fitness.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree
8. It is safe for my child to play in our neighborhood with other children without adult supervision.
- Strongly disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Strongly agree
9. On most school days how many hours **per day** does your child spend on the computer/tablet (surfing the Internet, instant messaging, playing computer games), watching TV, and playing video games when **away from school**?
- My child doesn't do any of the above activities
 - Less than 1 hour
 - 1 hour

- 2 hours
- 3 hours
- 4 hours
- 5 hours
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- I have a disability or health condition that prevents me from being physically active

11. I am physically active with my child. (**Examples:** running, jogging, walking fast, bike riding, swimming, dancing, or skating)

- Never
- Yes, some of the time
- Yes, most of the time
- Yes, all of the time
- My child has a disability or health condition that prevents him/her from being physically active
- I have a disability or health condition that prevents me from being physically active

12. I watch my child when he/she is being physically active.

- Never
- Yes, some of the time
- Yes, most of the time
- Yes, all of the time
- My child has a disability or health condition that prevents him/her from being physically active

13. During the past 7 days, how many times:

Fill in <i>one</i> answer for each question	Never	1 to 2 Times	3 to 4 Times	5 to 6 Times	7 Times	More than 7 Times
a. Did you eat breakfast?						
b. Did you eat an evening meal together with your child?						
c. Did you watch TV while						

eating an evening meal?						
d. Did your child help you prepare an evening meal?						
e. Did you eat a meal from a sit-down or fast food restaurant?						
f. Were fresh/frozen fruits served as snacks in your home?						
g. Were fresh/frozen vegetables served at the evening meal in your home?						
h. Was skim or non-fat milk served at meals or snacks in your home?						
i. Was 100% whole-wheat or wholegrain bread or tortillas served at meals in your home?						
j. Was sugar-sweetened cereals (Frosted Flakes®, Fruit Loops®, Cocoa Pebbles®, etc.) served at breakfast in your home?						
k. Were sugar-sweetened drinks served at the evening meal in your home?						

14. How often do you buy/receive fruits or vegetables from:

Fill in <i>one</i> answer for each location	All of the time	Most of the time	Some of the time	Never
a. A large chain grocery store or supermarket (such as Publix)?				

b. A natural or organic supermarket (such as Whole Foods Market)?				
c. A small local store or corner store?				
d. A convenience store (such as 7-Eleven or mini market)?				
e. A warehouse club store (such as Sam's Club or Costco)?				
f. A discount superstore (such as Wal-Mart)?				
g. An ethnic market?				
h. A farmer's market/co-op?				
i. A food bank/pantry?				
j. Your own garden?				

15. Which of the following are you trying to do about your weight?

- Lose weight
- Gain weight
- Stay the same weight
- I am not trying to do anything about my weight

16. If I am overweight, I am more likely to have more health problems like cancer or heart disease.

- True
- False
- I don't know

17. How many total cups of **fruits** should your child eat each day?

- At least 1
- At least 2
- At least 3
- At least 4
- I don't know

18. How many total cups of **vegetables** should your child eat each day?

- At least 1
- At least 2
- At least 3
- At least 4
- I don't know

19. Experts recommend that children should be physically active for at least how many **minutes per day**?

- 10 minutes
- 20 minutes
- 30 minutes
- 60 minutes
- 90 minutes
- I don't know

20. Experts recommend that children engage in no more than how many hours of media-related activities, such as TV watching and video game playing, **per day**?

- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours
- I don't know

21. Experts recommend that children should be physically active on how many **days per week**?

- 0 days
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
- I don't know

Appendix E

Nutrition Label: Old versus New

Nutrition Facts	
Serving Size 2/3 cup (55g) Servings Per Container About 8	
Amount Per Serving	
Calories 230	Calories from Fat 72
% Daily Value*	
Total Fat 8g	12%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%
* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.	
	Calories: 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	

- It is

important to notice the servicing size on the nutrition label. It is easy to eat more than one “serving” of food.

- Staying within the Nutritional Goals is very important to keep our kids healthy!
- Eating 200 extra calories a day is an extra 1,400 calories each week, and an extra 42,000 calories every month!
- “Added sugars” are usually found in sugary sweetened drinks like soft drinks, fruity drinks, and “juice drinks” that are not 100% fruit juice. It is hard to meet Nutritional Needs if more than 10% added sugars are consumed each day.

Daily Nutritional Goals for Age-Sex Groups Based on Dietary Reference Intakes and Dietary Guidelines Recommendations

	Child Age 1-3	Girl Age 4-8	Boy Age 4-8	Girl Age 9-13	Boy Age 9-13
Calories	1000	1200	1400-1600	1600	1800
Protein (g)	13	19	19	34	34
Carbohydrates (g)	130	130	130	130	130
Added sugars (%kcal)	<10%	<10%	<10%	<10%	<10%
Total fat (%kcal)	30-40	25-35	25-35	25-35	25-35
Saturated fat (%kcal)	<10%	<10%	<10%	<10%	<10%
Calcium (mg)	700	1,000	1,000	1,300	1,300
Iron (mg)	7	10	10	8	8
Potassium (mg)	3,000	3,800	3,800	4,500	4,500
Sodium (mg)	1,500	1,900	1,900	2,200	2,200
Vitamin A (mg)	300	400	400	600	600
Vitamin E (mg)	6	7	7	11	11
Vitamin D (IU)	600	600	600	600	600
Vitamin C (mg)	15	25	25	45	45

Adapted from the United States Department of Agriculture Center for Nutrition Policy and Promotion, 2015-2020 Dietary Guidelines for Americans, 8th edition. Retrieved from:
<https://health.gov/dietaryguidelines/2015/guidelines/appendix-7/#table-a7-1-daily-nutritional-goals-for-age-sex-groups-based-on-d>

Healthy U.S.-Style Eating Pattern: Recommended Amounts of Food From Each Food Group					
	Child Age 1-3	Girl Age 4-8	Boy Age 4-8	Girl Age 9-13	Boy Age 9-13
Vegetables	1 cup	1 ½ cups	1 ½-2 cups	2 cups	2 ½ cups
Fruits	1 cup	1 cup	1 ½ cups	1 ½ cups	1 ½ cups

Grains	3 oz.	4 oz.	5 oz.	5 oz.	6 oz.
Dairy	2 cups	2½ cups	2½-3 cups	3 cups	3 cups
Protein Foods (meats, eggs, nuts, etc.)	2 oz.	3 oz.	4-5 oz.	5 oz.	5 oz.
Oils	15 g	17 g	17-22 g	22 g	24 g

Adapted from the United States Department of Agriculture Center for Nutrition Policy and Promotion, 2015-2020 Dietary Guidelines for Americans, 8th edition. Retrieved from: <https://health.gov/dietaryguidelines/2015/guidelines/appendix-3/#table-a3-1-healthy-us-style-eating-pattern-recommended-amounts-o>

Vegetables

- Many youngsters love to “dip” their foods...explore new vegetables with your kids! Cauliflower, carrots, broccoli, cucumbers, and celery are some good choices to try.
- Dried beans, while in the Vegetable Food Group, are also a GREAT source of protein, dietary fiber, potassium, and are low in sodium. They are also inexpensive and leftovers can be used to make a variety of other dishes for later in the week (chili, refried beans, soups, etc.)
- If your child refuses to eat vegetables, try “hiding” vegetables in other foods...make a smoothie with spinach or kale (a “Hulk Shake”), or add 2 cups of chopped spinach to hamburger meat while cooking (the spinach cooks down, mixes with the meat, and the kiddos *never know it’s there!*)
 - Even though “hiding” will work for a while, don’t give up on encouraging your child to eat veggies! Just like adults, kids taste change and they will eventually like to eat vegetables!

Fruits

- Fruit or 100% fruit juice both count in the Fruit Food Group. Canned and packaged fruits are also acceptable if they are packaged in 100% fruit juice.
- Be careful with “fruit cocktails” as they usually contain added sugars. Fruits that are packaged in “light syrup” also have added sugar.
- Don’t be scared to try new fruits with your children. Buy fruits that are “in season”. Try shopping at a Farmer’s Market!

Grains

- Crackers, breads, muffins, cereals, oatmeal, rice, and pastas are all in the Grains Food Group.
- *Half of the grains consumed need to be whole grains such as oatmeal, brown rice, 100% whole wheat, or whole grain.*

Protein Foods

- In general, 1 ounce of meat, chicken, or fish, ¼ cup cooked beans, 1 egg, 1 tablespoon of peanut butter, or ½ ounce of nuts or seeds are considered as 1 oz. from the Protein Foods Group.
- It is best to choose meats that are lower in fat (lean meats). Packaging for these meats say they are at least 85% “lean” on the packaging (the higher the number, the less fat the meat will have). Also, chicken without the skin (skinless chicken breasts, etc.) are also more lean and have less fat.

Oils

- Oils are fats that are liquid at room temperature, like the vegetable oils used in cooking. Oils come from many different plants and from fish. Oils are NOT a food group, but they provide nutrients, therefore, they are included in USDA food patterns.
- Some foods that are good sources of oils include: fish, peanut butter, mayonnaise, olives, and avocado.