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The Emerging Epidemic of Type 2 Diabetes and Obesity Amongst Young Children

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The Emerging Epidemic of Type 2 Diabetes and Obesity Amongst Young Children

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NURS 4500: Nursing Research

Dr. Harris

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Abstract

Background:

In the past years childhood obesity has increased tremendously and currently $\frac{1}{3}$ of children in the United States are obese today. Obesity and Type 2 Diabetes are illnesses that can later on lead to more severe health complications when as a child enters adulthood. Children who are obese have a greater risk of developing Type 2 diabetes, and currently more than 80% of children who already are diagnosed with Type 2 diabetes are obese. In school and often by health care providers we are told daily physical activity and healthy diet are the best ways to maintain optimal health, but what they fail to take into consideration is the social impact surrounding the child from obtaining goals related to health.

Objective:

The purpose of this investigation is to find methods of prevention for Type 2 diabetes and obesity in children by taking into consideration their surroundings influences including their social, economic, cultural, and geographical factors with an emphasis on how parental support can directly impact the developing dietary and physical habits a child needs to maintain optimal health.

Methods:

Through a thorough review of the research this thesis explores the following questions:

- How do a children's surroundings, such as social, economic, cultural, and geographical factors, and parental support impact their developing dietary and physical habits, which ultimately are needed to maintain optimal health?
- Are the recommendations of health care providers for healthy lifestyle changes taking into consideration the influences of child's homes and the environment?

Based on the findings of the Literature Review, a proposal for further research is described.

Summary of Findings:

Family lifestyle modification interventions have been proven to be the most effective treatment for childhood obesity, because habits that develop from childhood are harder to modify in adulthood. If parents implement good eating habits and promote physical activity those habits are reflected in their children, but research has found that parents who are obese and also diabetic, do not influence healthy eating or physical activity as often as they should.

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Introduction

In the past years, there has been increasing evidence that children in the United States (U.S) are at an increased risk for developing Type 2 Diabetes (T2D) and obesity. Obesity is defined as abnormal or excessive fat accumulation that is a threat to your personal health, and may lead to acute or chronic conditions such as diabetes. A body mass index (BMI) over 25 is considered overweight, and over 30 is obese. According to Styne et al (2017), the incidence of developing obesity during childhood has increased over the years to include 17% of the pediatric population and according to Pulgaron et al (2014) about one-third of children in the U.S. are currently overweight or obese. For a child to be overweight beginning at a young age it often increases the risk for late adulthood obesity, and the development of T2D especially if the history of the condition is already present in their family. The link between obesity and Type 2 Diabetes has often been reported, the National Institute of Health Research (2016), stated children who are obese have about a four times greater risk of developing type 2 diabetes compared to those whose weight is within normal limits, and currently more than 80 percent of all children and adolescents with type 2 diabetes are overweight, and about 40 percent are considered to be clinically obese.

Problem Statement

For young children who are currently at risk for type 2 diabetes and obesity, are the recommendations of health care providers for healthy lifestyle changes effectively implemented taking into consideration a child's surrounding influences of home and environmental factors.

Purpose Statement

It is important that we find methods of prevention that promote health and decrease risk factors while taking into consideration social factors, economic factors, cultural factors, family factors and geographical factors.

Literature Review

The research studies I incorporated in my writing focus primarily on the surrounding influences of children when it comes to promoting healthy dietary habits and physical activity in order to prevent obesity and type 2 diabetes from escalating. There has been a numerous amount of evidence that the obesity population is increasing throughout children. When a child is obese, they have a four times greater risk of developing type 2 diabetes compared to those whose weight is with in normal limits, and 80% of children who already have type 2 diabetes are obese. In my research, I hope to answer how socioeconomic status affects a child's dietary health, and how parental support can directly impact the developing dietary and physical habits a child needs to maintain optimal health.

I chose to focus on this topic, because throughout the past years there has been a 17% increase in childhood obesity. Obesity is an illness that leads to further health complications that may be acute or chronic, and it is important to find modes of prevention to keep children healthy and create healthy habits for a healthy adulthood and in order to evade further chronic complications. In school and often by health care providers we are told daily physical activity and healthy diet are the best ways to maintain optimal health, but what they fail to take into consideration is the social impact surrounding the child from obtaining goals related to health.

The objective for my literature review is to find evidence on how socioeconomic status, cultural factors, geographical factors and how parental support can directly impact the

developing dietary and physical habits a child needs to maintain optimal health. I found my articles directly through PubMed and Dominican Scholar only. I ran into many supporting secondary source articles, a lot of the primary sources were outdated, but I still managed to find a few that were evidenced based and systemic reviews. References cited in review articles were used to help locate primary sources. Primary research for this review includes both qualitative and quantitative studies, such as randomized trials.

I have a total of seven articles. I chose six articles and one review article to use for my paper. All of which I chose had sufficient background information, details, study design, control groups with populations at risk, and many other contributing factors. I decided since I am specifically focusing on the impact surrounding influences have on children and their physical and dietary habits I chose to research the following topics: social, economic, cultural, and geographical factors and an emphasis on parental support. I am choosing to organize the categories by the most broad and general information to the most specific. It combines the following topics to socioeconomic status, cultural and geographical and parental support as its own category. Please see Appendix B for a Literature Review Table with a summary of each article.

Category 1: Socioeconomic Status

In relation to childhood obesity, countless articles never fail to mention the impact socioeconomic status has on a child's health. Being of a low socioeconomic status itself, is considered a risk factor for childhood obesity. In the article "Socioeconomic Status and Other Factors Associated with Childhood Obesity" by The Journal of the American Board of Family Medicine Williams et al (2018), about obesity is estimated to cause approximately 2.6 million

deaths worldwide, due to the amount of underlying diseases it may set the foundation to. Early Prevention begins as a child.

When it comes to adults and children, higher rates of obesity and decreased physical activity are found in groups with low socioeconomic status, and it has been assumed that these contributing factors are linked to be one of main causes in obtaining a higher prevalence and earlier onset of type-2 diabetes. Childhood obesity is known to be correlated with socioeconomic status and is most prevalent among children living in disadvantaged or rural areas. The rising epidemic of obesity in young children in the United States could be due to multiple factors but is directly rooted in the increased caloric intake and foods that lack nutritional values as well as lack of physical activity. The imbalance of nutrition and activity affect children disproportionately of lower socioeconomic status compared to those who are of higher socioeconomic status. Being of a low socioeconomic status is a risk factor itself for childhood obesity and Type 2 diabetes, low parental income and childhood obesity are directly correlated, and studies have proven to see an increasing number of obesities in children whose parents are low income (<25,000). When parents are of low income, they tend to buy cheaper options for their children whether it be fast food, or processed foods. Exposing a child to a diet filled with processed, frozen or fast foods, establishes the tendency to develop poor nutritional preferences that result in unhealthy habits which are harder to modify in adulthood.

Category 2: Cultural and Geographical Factors

The widespread of obesity and Type 2 Diabetes has often been tied back to an individual's culture/ethnic background and the neighborhoods children grow up in have shown to have a significant impact on their developing health. These articles chosen are based on statistical information of the most vulnerable populations to developing type 2 diabetes and

obesity associated with race, culture and geographical background. The article "iAmHealthy: Rationale, Design and Application of a Family-Based mHealth Pediatric Obesity Intervention for Rural Children" Davis et al (2019) about is a cluster randomized design that was meant to be implemented to eight pairs of parents and children who live in rural areas, and consists of a family-based behavioral, nutrition and physical activity intervention. The study has been developed with input from rural children and families. iAmHealthy is a 25-contact hour multicomponent intervention distributed over an 8-month period targeting specifically 2nd-4th grade school children and their families. This study took place in Kansas.

In the past decade, lower income and ethnic minority status have demonstrated to be factors associated with the prevalence of both Type 2 Diabetes and obesity. Research has revealed that a sedentary based lifestyle is most prevalent in ethnic minorities such as Mexican American families or African American families, in addition to living in low-income neighborhoods these contributing factors have been linked to the lack of physical activity and abundance of obesity amongst children. Studies have shown that Mexican Americans and African Americans have demonstrated higher risk for type 2 diabetes, increased BMI, and most likely to develop hypertension as an adult. This could be due to underlying causes of cultural patterns such as eating their ethnic food that tends to be higher in fat and calories, processed food due to lack of access most commonly seen in rural areas, or existing history of obesity and type 2 diabetes in their family. Based on geographical factors, it has been evident, disadvantaged areas have created a barrier for access to fresh food produce. Certain regions known to be of low socioeconomic status, have less access to fresh grocery store products, and being of further distance from rural areas. School environments have also been shown to have a significant effect on the amount of physical activity implemented on children that attend. Schools of low

socioeconomic status have been found to have less physical activity implemented compared to those of high socioeconomic status.

There have been various social factors that have disproportionately affected the health of a child. Although health outcomes are more prevalent in ethnic minorities, due to a history of underlying causes, understanding the components of culture and location of a child is an essential component in order to deliver the most effective interventions to keep children healthy, and prevent them from obtaining chronic issues in adulthood. Interventions for the prevention of Type 2 Diabetes and obesity include parent education, promoting healthy activities to avoid sedentary lifestyle (based on what is available to the family), and resources to obtain healthy foods.

Category 3: Parental Influence

The article I chose focuses on the direct impact of family-based intervention being the strongest asset in modes of prevention for childhood obesity and type 2 diabetes. The article “A Healthy School Start Plus for Prevention of Childhood Overweight and Obesity” in disadvantaged areas through parental support in the school setting. This study consisted of a quantitative cluster randomized trial based in Sweden. The 6-month program, based on Social Cognitive Theory, consists of four components: 1) Health information to parents regarding the child; 2) Motivational Interviewing with the parents by the school nurse concerning the child; 3) classroom activities for the children by teachers; and 4) a web-based self-test of type-2 diabetes risk by parents.

When dealing with parental influence amongst childhood obesity it is important to consider medical and family history as a crucial asset, because obesity and other associated comorbidities could be present increasing the child's risk for developing the chronic illness.

Changes in childhood health are beyond control from a clinical setting and require changes at the highest level whether it be at home or at school. According to Davis et al (2019), Parental practice and daily interactions between a child and a parent directly have an impact on children's dietary and physical habits. If parents practice healthy eating and daily exercise the outcome for their child to be healthy is higher than parents who lack physical activity and prefer a sedentary based lifestyle rather than an active one. Research indicates that if a child's parents are obese and do not control their caloric intake, a child is highly likely to adopt the same unhealthy habits. Absence of parental cooperation and negative relationships between a child and their parent form a barrier and create unhealthy behaviors whereas practicing serving as role models for healthy eating by providing meals at home, and promoting exercise tend to show stronger associations in controlling a child's healthy and unhealthy food consumption, later on preventing chronic issues in adulthood. Parental involvement ties together all factors of the child's life including their social, economic, cultural, and geographical factors that can directly impact the developing dietary habits.

Summary of Findings:

Family lifestyle modification interventions have been proven to be the most effective treatment for childhood obesity, because habits that develop from childhood are harder to modify in adulthood. If parents implement healthy habits such as nutritional dietary habits and promote frequent physical activity create a routine directly reflected in their children, but research has found that parents who are obese and also diabetic do not influence healthy eating or physical activity as often as they should. Health-related habits and early onset obesity often range from childhood into adulthood, interventions should start from an early age and target each family

member involved in the child's health. Vigorous lifestyle interventions are necessary when being in contact with both the patient and family; it is important to provide dietary and nutritional education, physical activity advice, and sometimes behavioral therapy if a patient is already experiencing disturbed body image or if parents are having a hard time adjusting traditional habits.

Introduction Research Proposal

The main purpose of my research proposal I am conducting is to better understand the correlation between childhood obesity and socioeconomic status, cultural factors, geographical factors and how parental support can directly impact the developing dietary and physical habits a child needs to maintain optimal health. Questions that arise during research are how often physicians take into consideration the socioeconomic status of the patient as well as how often parents implement healthy habits in their children to prevent unhealthy adulthood.

The rationale in my proposed research study relates back to the problem statement that in the past decade there has been an increase of about 17% in childhood obesity. Physicians need to further take into consideration the surrounding influences of a child in order to prevent obesity whether it be parents, environmental factors, social factors or financial factors. If parents do not implement healthy habits on their children from a young age their unhealthy habits will be harder to modify in adulthood leading to chronic issues including obesity, Type 2 diabetes which is now more prevalent in children and many other illnesses may progress.

Theoretical Framework

The theoretical framework I am planning to use for my research proposal is the nursing theorist Dorothea Orem. Dorothea Orem's self-care theory focuses on the actions that individuals

perform on their own behalf to maintain optimal health. In the article “Dorothea E. Orem’s Contribution to Nursing Theory” Orem was described to be a leading theorist of nursing practice and education, after the theory had been established. The self-care theory emphasizes the importance in one's actions to initiate and perform activities that maintain their health and well-being. This theory relates to my proposal, because those who are implementing unhealthy habits in children may be facing the consequence of self-care deficit. In children self-care deficit refers to the “parent’s inability (to maintain continuity for the child the amount and quality of care that is therapeutic.” Orem’s self-care theory supports my problem statement in which parents should implement healthy habits on their children from a young age to prevent chronic illness.

Primary Research Aim

The study I will be conducting will be a mixed-method, descriptive study, using survey questionnaires. I am hoping the subjective information I will gather will be answered honestly. My plan is to ask 12 questions to parents via survey, regarding how often they encourage physical activity in their children's lives, if there is an effort to eat healthy in the family, if there is a history of type 2 diabetes or obesity in the family and if there are any obstacles, they face in their social life that make physical activity or nutrition harder to obtain for their health.

To determine the feasibility of the research plan, a pilot study is being proposed.

Population And Sample

I am choosing my population to be parents of young children, who may or may not be at risk for developing obesity and type 2 diabetes later in the future. Recruiting will take place initially through word-of-mouth and snowball sampling among coworkers, friends, or family members. I personally know a lot of families with children, some parents themselves being obese and others who maintain healthy habits. I trust that participants will answer the survey honestly.

Type of Sample

- (Snowball, Non-Probability Sampling)
- Sample Size (12)
- Recruitment (Coworkers with children, neighbors and family members)

Ethical Considerations

Some ethical issues that could possibly arise are the consent of the participants. For the pilot study, recruitment will take place among a group of people who are known to the researcher and may be known to each other. However, the study will consist of an online survey in which no personal identifying information will be collected. I will explain the study aims and provide a link to the online survey to each individual who may be interested in participating. A signed consent form is not required for an online survey that collects identifying information. Potential participants will be informed that submission of their responses will constitute consent. I also will advise that if at any point they feel uncomfortable they can skip any questions, and they do not have to continue with the study. I will explain that if for any reason their identity inadvertently becomes apparent, their responses will remain strictly confidential. If they feel comfortable, I will provide them with the a link to the survey. The individuals I will consider for my research are mainly populations in where the parents are obese, research shows children tend to pick up on their parents' unhealthy habits. I would also like to provide the survey to parents who are healthy and see how often they implement healthy habits on their children as well.

The Dominican University of California Internal Review Board (IRB) will review the study for ethical considerations and privacy issues. Data collection will start only after IRB approval.

Methodology

My plan for my research study consists of using a quantitative online survey with one open-ended question (See Appendix A for a copy of the survey, which includes a link to the online survey that is inactive). I would let potential participants know that only the researchers will have access to their answers and will keep them confidential. The survey will include 12 questions, and the questions could possibly make them feel uncomfortable, because some may realize they're child may be at risk for developing unhealthy behaviors, due to their lack of involvement they require to maintain optimal health. This research study is based on a content analysis of the results collected from surveys.

Analysis

Quantitative data will be analyzed using descriptive statistics. The qualitative data obtained from the open-ended question will be analyzed using content analysis. Participants answers will be searched for similar words and phrases and the words and phrases will be grouped into categories. An expert in qualitative data analysis will be consulted for assistance in exploring the categories for themes that may be embedded in participants' answers.

Conclusion

Throughout the journey of conducting my research, I learned a variety of information in regard to risk factors and prevention methods of obesity. In all of my research, new material that emerged was something as simple as someone's culture is considered to be a risk factor of obesity. I did not know the culture as well as geographical location and low-income neighborhoods had a tremendous impact on a child's health. I knew it was an influential factor, but through research, and studies some acquired families do not have proper access to fresh

foods. In the article “iAmHealthy: A Pediatric Intervention, a study was conducted for families that live in rural areas. The study revealed that a common barrier they face is the distance to the nearest grocery store, but fast food and convenient stores are of a closer distance. I have never lived in a rural area, and all my life I have had access to grocery stores nearby. Before conducting my research, I did not take into consideration how much a neighborhood could potentially impact food access and be a risk for future health complications.

In clinical practice, it is important to understand the impact of the variables surrounding a child and their unhealthy patterns of lack of physical activity and altered nutrition can potentially cause problems associated with obesity and are crucial factors to consider when developing effective policies for clinical interventions, and interventions beyond a hospital setting. Early prevention remains the maximum sustainable alternative. A more efficient mode of prevention would be parental education with consideration of all the factors discussed cultural, geographical, social, economic, and family life. The rate of obesity and type two diabetes in children has only been increasing and will only cause harm to individuals in the future if modes of prevention such as consistent physical activity and changes in dietary habits are made.

The implementations for physical activity and diet are habits acquired through family interventions and go beyond clinical setting. In a hospital setting, understanding of a family's socioeconomic status helps develop a more efficient plan revolving around the child's surrounding influences, a provider along with other hospital personnel should help assist families in order to obtain the most valuable resources to reduce the risk of a child from becoming obese and developing type 2 diabetes. Members of the household in which the child pertains to are responsible to guide the child towards healthy decision making and implement good habits starting at a young age. If a child is exposed to unhealthy habits at a young age, those habits tend

to be most difficult to modify in adulthood, increasing the risk of being obese, and obtaining a chronic illness.

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Caprio, S., Daniels, S. R., Drewnowski, A., Kaufman, F. R., Palinkas, L. A., Rosenbloom, A. L., & Schwimmer, J. B. (2008). Influence of race, ethnicity, and culture on childhood obesity: implications for prevention and treatment: a consensus statement of Shaping America's Health and the Obesity Society. *Diabetes care*, 31(11), 2211–2221. <https://doi.org/10.2337/dc08-9024>

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<https://doi.org/10.3122/jabfm.2018.04.170261>

Davis, A. M., Beaver, G., Dreyer Gillette, M., Nelson, E. L., Fleming, K., Swinburne Romine, R., Sullivan, D. K., Lee, R., Pettee Gabriel, K., Dean, K., Murray, M., & Faith, M. (2019). iAmHealthy: Rationale, design and application of a family-based mHealth pediatric obesity intervention for rural children. *Contemporary clinical trials*, 78, 20–26.

Elinder, L. S., Patterson, E., Nyberg, G., & Norman, Å. (2018). A Healthy School Start Plus for prevention of childhood overweight and obesity in disadvantaged areas through parental support in the school setting - study protocol for a parallel group cluster randomised trial. *BMC public health*, 18(1), 459. <https://doi.org/10.1186/s12889-018>

Appendix A: Mixed Method Survey

The objective of this survey is to have a better understanding of the impact parents potentially make amongst their children when it comes to their dietary habits and implementing physical activity. The questions presented in this survey are about your children's dietary and physical habits. Your participation in this survey is voluntary and will be kept confidential. No question requires an answer. You may stop answering questions at any time. Submission of this survey signifies your informed consent to include your responses in the data analysis.

To complete this survey, please click this (*hypothetical*) link:

1. How important is your child's health to you?

1 2 3 4 5

Somewhat
Important Very Important

2. Do you believe what you eat influences your future, and could put you at risk for chronic complications? (Diabetes, heart problems, high cholesterol)?

Yes

No

3. When grocery shopping which factors do you often take into consideration:

	Yes	Sometimes	NO
Nutrition (Is it healthy?)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Processing of the food?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrition Facts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cheaper food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Do you believe your financial position or socioeconomic situation is currently influencing your own child's health? (physically, dietary or mentally)

Yes

No

5. Is pricing of food a barrier in your family's life?

Yes

No

6. Based on your geographical location or neighborhood, do you have fresh produce access within a convenient commute?

Yes

No

7. Do you often have home cooked meals or are you often preparing frozen food or eating out?

Home cooked meals

Frozen Food/ Eat out

8. About 4.8 million kids in the United States, ages 10 to 17 are obese (just over 15%) and at risk for Type 2 diabetes

True

False

9. How often do you as a parent encourage your child to get some exercise?

Always

Often

Sometimes

Rarely

Never

10. How many times a week is your child physically active?

- Not at all
- 1-2 times
- 3+ times a week

11. As a parent, how strong do you believe your impact is on your child's health?

- 1 2 3 4 5
- Moderate Very Strong

12. Are there any other considerations you would like to share?

Appendix A: Literature Review Table

Title: The Emerging Epidemic of Type 2 Diabetes and Obesity Amongst Young Children

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Pulgaron, E. R., & Delamater, A. M. (2014). Obesity and type 2 diabetes in children: epidemiology and treatment. <i>Current diabetes reports</i> , 14(8), 508. https://doi.org/10.1007/s11892-014-0508-y	To review the epidemiology and treatment of obesity and type 2 diabetes (T2D) in children and adolescents, as well as consider other relevant factors such as etiology and behavioral and psychological correlates.	122	Systemic Review, secondary data	Based off a national longitudinal study in the which indicated that 12.4% of children in kindergarten were obese and another 14.9% overweight; overweight 5-year-olds were four times more likely than normal weight children to become obese later in childhood at age 14, and among children who later became obese, half were overweight at baseline and three-quarters were above the 75th %ile for BMI .	There is evidence for the efficacy of family-based behavioral treatment to control weight and improve health outcomes	Data and information provide unique benefits for increasing awareness in terms of family influence and environmental challenges the child may face. Provides results that can be used in evidence-based practice.	No direct experiment in this article, but they used evidence based off others' experiences. Used secondary data
Davis, A. M., Beaver, G., Dreyer Gillette, M., Nelson, E. L., Fleming, K., Swinburne Romine, R., Sullivan, D. K., Lee, R., Pettee Gabriel, K., Dean, K., Murray, M., & Faith, M. (2019). iAmHealthy: Rationale, design and application of a family-based mHealth pediatric obesity intervention for rural children. <i>Contemporary clinical</i>	to assess the effectiveness of iAmHealthy, a home-based pediatric obesity treatment program tailored for rural families, compared to similar content delivered via newsletter.	8 parent/child pairs	cluster randomized design	Topics are discussed at the individual level and at the family and school/community level, allowing families to discuss barriers unique to their rural schools and communities Children were recruited via survey sent out to rural elementary school in Kansas	Families living in a rural area struggle of not having the convenience of access to fresh food	IamHealthy focuses on socioeconomic status and families living in rural areas, facing barriers to fresh food access.	Small sample of families.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
<i>trials</i> , 78, 20–26. https://doi.org/10.1016/j.ct.2019.01.001							
Elinder, L. S., Patterson, E., Nyberg, G., & Norman, Å. (2018). A Healthy School Start Plus for prevention of childhood overweight and obesity in disadvantaged areas through parental support in the school setting - study protocol for a parallel group cluster randomised trial. <i>BMC public health</i> , 18(1), 459. https://doi.org/10.1186/s12889-018-5354-4	To promote healthy dietary habits and physical activity and prevent obesity in children through parental support in disadvantaged areas with increased health needs, delivered by teachers and school nurses. To explore their views on the acceptability and feasibility of the intervention.	352 Swedish children	Mixed Methods - Qualitative - semi-structured interviews with parents, school nurses and head teachers Quantitative - Cluster randomized trial.	This protocol describes the design, outcome and process evaluation of the study. 1) Health information to parents regarding the child; 2) Motivational Interviewing with the parents by the school nurse concerning the child; 3) classroom activities for the children by teachers; and 4) a web-based self-test of type-2 diabetes risk by parents.	One of the study's strengths is the well-developed programmed theory and the description of the hypothetical mechanism of change as well as the strong study design	The Healthy School Start Plus intervention aims to promote healthy dietary habits and physical activity and prevent obesity in children through parental support in disadvantaged areas with increased health needs, delivered by teachers and school nurses.	The weakness of the study was that when dietary intake is assessed by self-report by either the child or parent. So details could possibly go missing.
Arenaza, L., Medrano, M., Amasene, M., Rodríguez-Vigil, B., Díez, I., Graña, M., Tobalina, I., Maiz, E., Arceche, E., Larrarte, E., Huybrechts, I., Davis, C. L., Ruiz, J. R., Ortega, F. B., Margareto, J., & Labayen, I. (2017). Prevention of diabetes in overweight/obese children through a family based intervention program including supervised exercise (PREDIKID project): study protocol for a randomized controlled trial.	To determine if a study based off Prevention measures and identification of children with a high risk of developing T2D could help to improve their cardiovascular health and to reduce the comorbidities associated with obesity.	A total of 84 children, aged 8-12 years, with a high risk of T2D.	Randomized controlled trials.	The control group will receive a family based lifestyle education and psycho-educational program (2 days/month), and the intervention group will continue with their same lifestyle education and psycho-educational program plus the exercise program (3 days/week, 90 min per session exercise of different variations.	Family based lifestyle modification interventions seem to be the most effective treatment for childhood obesity Habits from childhood are harder to modify in adulthood.	The aims of the study: (1) to evaluate the effect of a 22-week family based intervention program, including supervised exercise, on insulin resistance syndrome (IRS) risk in children with a high risk of developing T2D and (2) to identify the profile of microRNA in circulating exosomes and in peripheral blood mononuclear cells in children with a high risk of developing T2D and its response to a multidisciplinary intervention program including exercise	This article included a lot of information that would be beneficial to my paper, but the explanations to their statements were very general and not detailed. While I was reading this article I asked myself a lot of "why" and "how" questions that did not get answered in the article.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Trials, 18(1), 372. https://doi.org/10.1186/s13063-017-2117-y							
Styne, D. M., Arslanian, S. A., Connor, E. L., Farooqi, I. S., Murad, M. H., Silverstein, J. H., & Yanovski, J. A. (2017). Pediatric Obesity-Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline. The Journal of clinical endocrinology and metabolism, 102(3), 709–757. https://doi.org/10.1210/jc.2016-2573	To formulate clinical practice guidelines for the assessment, treatment, and Methods of prevention of pediatric obesity	Endocrine Society-appointed Task Force of 6 experts	Evidence based. Systematic Review.	evidence-based guidelines were developed using the Grading of Recommendations, Assessment, Development, and Evaluation approach to describe the strength of recommendations and the quality of evidence.	17% of US children and adolescents, threatening their adult health and longevity.	This article reflects a lot of the current problem with obesity and doesn't not fail to mention all the modes of prevention that have been mentioned before are more detailed including pathophysiology.	There were no active children participants conducted during the study.
McDowell, Malia, "Nurses' Perception of the Relationship between Socioeconomic Status, Incidence Rates and Complications of a Type 2 Diabetes Diagnosis in the Adult Population" (2018). Honors Theses. 32. https://doi.org/10.33015/dominican.edu/2018.HONORS.ST.13	To review the literature that reflects studies conducted on lower socioeconomic patients at risk for diabetes. A nurse's perceptions on how socioeconomic status influences the risk of developing type two diabetes IN CHILDREN.	10 nurses	Literature Review and Qualitative Surveys with open-ended questions.	10 nurses from the bay area and their perceptions of the correlation between low socioeconomic levels, the development of diabetes, and later development of complications.	subjects agreed that there is a direct correlation with economic status and development of complications.	This article was one of my favorite resources, because it was written by a Dominican student and our topics are almost identical.	I believe her organization of the paper could be improved, but overall she focused on the opinions of nurses and didn't target children in her study.

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<p>Williams, A. S., Ge, B., Petroski, G., Kruse, R. L., McElroy, J. A., & Koopman, R. J. (2018). Socioeconomic Status and Other Factors Associated with Childhood Obesity. <i>Journal of the American Board of Family Medicine : JABFM</i>, 31(4), 514–521. https://doi.org/10.3122/jabfm.2018.04.170261</p>	<p>to create a model to examine how socioeconomic status modifies risk factors for child obesity.</p>	<p>Children in early childhood (kindergarten age children)</p>	<p>a secondary data analysis of the Early Childhood Longitudinal Birth Cohort</p>	<p>Using logistic regression, we modeled childhood obesity status from known parental and child risk factors for childhood obesity and tested interactions with socioeconomic status.</p>	<p>Parental smoking, birth weight, and not eating dinner as a family were two modifiable factors associated with overweight and obesity</p>	<p>Data and Information provide unique benefits in the known contributing factors to obesity and Type 2 diabetes.</p>	<p>The article is not a primary source.</p>

