Risk Factors Affecting Childhood Obesity: A Preliminary Study

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Abstract
Knowledge of nutrition, such as servings per day, naming fruits and vegetables, and how food gives energy, are important to learn in promoting a healthier lifestyle. Health educators should be using methods to ensure that students have knowledge of what should and should not be put into their bodies. This is important as their family may not have the education to know what their child’s nutritional needs are (Baskale & Bahar, 2011). Therefore, the purpose of this article is to present a review of school nutrition education interventions in Oklahoma before providing a two-lesson plan to educate elementary children on nutritional topics. In addition, this article provides an effective method for assessing the effectiveness of the lesson plans, which are easily integrated into other subjects such as math and reading. Lessons and assessments are provided with an explanation of how they should be used in order to determine improvement of children’s nutritional knowledge immediately following the lessons as well as long-term.

Although the definition of obesity and overweight has changed over time, it can be defined as an excess of Body Fat. Childhood obesity has reached epidemic levels in developed countries. This includes the United States of America which has twenty five percent of children that are overweight and 11% are obese. To put it into perspective, about 50% of the adults are overweight and obese in many countries, and it is difficult to reduce excessive weight once it becomes established. About 70% of obese adolescents grow up to become obese adults. Overweight and obesity in childhood are known to have significant impact on both physical and psychological health. This disorder is believed to have multiple causes including environmental factors, such as where you live and the health of your family members; lifestyle preferences, such as TV watching, video game playing, and physical activity; and cultural environment like economic status of your family and area, and education level of family members play pivotal roles in the rising of obesity worldwide (Dehghan, Akhtar-Danesh, & Merchant, 2005).

An inverse socioeconomic gradient for childhood obesity, health, and overall well-being exists. Poor physical health during childhood sets children on a downward trajectory and leads to chronic disease and degenerative conditions during adulthood. Low- and middle-income parents must manage modest household budgets that may not consistently allow for essential resources let alone seemingly expendable items like fruits and vegetables. During the current economic crisis, parents are concerned about their employment status, losing health care benefits, and are working longer hours to earn moderate wages (Sealy, 2010).

Several recent studies in children and adults report that the relationship between TV viewing and obesity is independent of physical activity or fitness level. Children who watched more hours per day of TV and those who watched TV for longer periods of time were less likely to engage in physical activity. Studies show that the amount of time spent viewing the TV and playing video games are significantly related to the prevalence of childhood obesity (Dennison, Erb, & Jenkins, 2002). Watching TV and playing video games all day will help your child become obese or overweight.
because all they are doing is setting down and eating and not doing any type of physical activity.

The role of physical activity in contributing to the physical, psychological, and social health and development of children cannot be underestimated. Research suggests that physical activity levels during childhood could partially predict physical activity levels in adulthood (Bois, Sarazzin, Brustad, Trouilloud, & Cury, 2005). Insufficient physical activity is widely acknowledged as one of the primary mechanisms underlying the rise in excess body weight (Veugelers & Fitzgerald, 2005).

Children are more at risk to become overweight or obese if their parents are obese. Parents have a big influence on their child’s life. Research has shown that two-thirds of adults are either overweight or obese. This means that there is a higher risk for children to become obese. Parents reported that they ate less fast food as children than their children currently consume (Sealy, 2010). Children living in low-income areas are at higher risk to being obese because their mothers are more likely to be obese (Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, 2001).

Childhood obesity has become a public health problem in industrialized nations. There are many risk factors that contribute to children becoming obese or overweight. A few of these factors include physical activity levels, amount of TV watched and video games played, socioeconomic status, education levels and income of parents, and influence of parental obesity. A child being obese affects more than just their health and their body; it also affects self-esteem and has negative consequences on cognitive and social development. There are also many health conditions that come from being obese such as type 2 diabetes, hypertension and hypercholesterolemia, and cardiovascular disease. There are many ways to help with preventing childhood obesity and this need to be taken into action (Veugelers, Fitzgerald, 2005).

Problem Statement

This research needs to be conducted because obesity is the leading preventable cause of death worldwide. Obesity isn’t only a gain of weight but it can increase the likelihood of various diseases, particularly heart disease, type 2 diabetes, breathing difficulties during sleep, certain types of cancer, and osteoarthritis. By doing this study, it can help parents see the factors that affect or don’t affect obesity and then they can help their children.

Purpose of Study

The purpose of this study is to find out whether or not the risk factors affected childhood obesity and also to educate the public on the main factors that cause childhood obesity in hopes of parents trying to make changes that could better the life of their children.

Significance of study

The outcome of this study will hopefully change the way educational programs in school deal with obesity. Children as well as adults need to be educated on being preventative. This could also make major changes to our society by providing healthier food in schools, making healthier foods more affordable, and getting children to be more active.

Organization of study

The introduction of this study offers background information on the subject and outlines the context of the problem being investigated. The following sections outline the literature relevant to this study as well as outlining the selection of the population and sample. A detailed procedure of how this study was conducted and data analysis of this study are also presented.

Hypothesis

Hypothesis 1- Since there is literature supporting income levels of parents affecting obesity, it is hypothesized that socioeconomic status does affect obesity.

Hypothesis 2- Since there is literature supporting amount of video games played affecting childhood obesity, it is hypothesized that income level does affect childhood obesity.

Hypothesis 3- Since there is literature supporting the amount of TV watched affecting childhood obesity, it is hypothesized that the amount of TV watched and video games played do affect childhood obesity.

Hypothesis 4- Since there is literature supporting physical activity levels affecting childhood obesity, it is hypothesized that physical activity levels do affect childhood obesity.

Hypothesis 5- Since there is literature supporting educational status of parents affecting childhood obesity, it is hypothesized that the educational status of parents does affect childhood obesity.

Hypothesis 6- Since there is literature supporting obese family members affecting childhood obesity, it is hypothesized that having obese family members affect childhood obesity.

Obesity is the consequence of an imbalance between energy expenditure, energy consumption, and energy
storage in the body (Roman, Serra-Majem, Perez-Rodrigo, Drobnic, & Segura, 2009). Overweight and obesity were defined using the international body mass index cut-off points established for children and youth (Veugelers & Fitzgerald, 2005). These cut-off points are based on health related adult definitions of overweight (> 25 kg/m) and obesity (> 30 kg/m) but are adjusted to specific age and sex categories for children (Veugelers & Fitzgerald, 2005).

Childhood Obesity
Childhood overweight and obesity rates are rising at an alarming rate. Numerous individual, family, community, and social factors contribute to overweight and obesity in children and are explored (Lawrence, Hazlett, & Hightower, 2010). If left unaddressed, the epidemic of childhood overweight and obesity may lead to amplified problems for individual children-including acute and chronic physical and psychological complications-and for the larger social environment. Overweight and obesity are characterized as chronic physical illnesses with associated chronic health complications and psychosocial implications (Lawrence, Hazlett, & Hightower, 2010). The prevalence of overweight and obesity in children, as defined by the presence of a body mass index for age ranging from the 85th to greater than the 95th percentile, is currently three times higher than it was in the 1980s (Lawrence, Hazlett, & Hightower, 2010). The prevalence of overweight among children has dramatically increased. Overweight in children can result in a variety of adverse health outcomes, including type 2 diabetes, obstructive sleep apnea, hypertension, dyslipidemia, and metabolic syndrome (Daniels, Arnett, Eckel, Gidding, Hayman & et al, 2005). Childhood overweight is one of the most important current public health concerns. (Daniels, Arnett, Eckel, Gidding, Hayman & et al, 2005). Childhood obesity has doubled over the past three decades with the highest percentage being African American, Hispanic, and Native American children. A child having increased weight puts them at risk for chronic disease, low quality of life, and poor health outcomes (Sealy, 2010).

Socioeconomic Status
Factors associated with lower income neighborhoods influence the overweight and obese status of children in these neighborhoods. Socioeconomic disadvantages are often a risk factor for overweight and obesity in children (Lawrence, Hazlett, & Hightower, 2010). Lower income neighborhoods and communities are often less safe, with higher crime rates, than higher income areas. Subsequently, children’s ability to spend time out of doors engaged in physical activity may be diminished (Lawrence, Hazlett, & Hightower, 2010). It is important to note that lower income areas may have fewer recreational activities and supermarkets with fresh and inexpensive produce. Low-income areas often have more fast-food restaurants and fewer healthy and affordable options (Lawrence, Hazlett, & Hightower, 2010). An inverse socioeconomic gradient for childhood obesity, health, and overall well-being also exists. Low and middle-income parents must manage modest household budgets that may not consistently allow for essential resources let alone seemingly expendable items like fruits and vegetables (Sealy, 2010). The incidence of overweight and obese children, especially those from low-income and minority backgrounds, continues to rise (Kelly & Patterson, 2006).

Television Viewing and Video Games
Television viewing is associated with obesity among school-aged children, adolescents, and adults. Children from families with lower educational attainment spend more time viewing TV than children from more highly educated families (Dennison, Erb, & Jenkins, 2002). Minority children watch more hours per week of TV than white children. Children who watched more hours per day of TV and those who watched TV for longer periods of time were less likely to engage in physical activity (Dennison, Erb, & Jenkins, 2002). It is of note that a TV set in the child’s bedroom was more strongly associated with increased risk of child overweight than the child’s weekly TV viewing hours, after adjustment for potential confounders, including race/ethnicity, maternal education, and maternal obesity (Dennison, Erb, & Jenkins, 2002).

Physical Activity
The role of physical activity in contributing to the physical, psychological, and social health and development of children cannot be underestimated. Research has demonstrated a moderate association between physical activity levels and physical health variables for children (Bois, Sarrazin, Brustad, Trouilloud, & Cury, 2005). Physically active children tend to have lower blood pressure levels and more favorable blood lipid profiles than sedentary children. In addition, research suggests that physical activity levels during childhood could partially predict physical activity levels in adulthood (Bois, Sarrazin, Brustad, Trouilloud, & Cury, 2005). Active participation in sport an exercise has beneficial social and psychological effects, such as increased social acceptance, and elevated self-
esteem and feelings of well-being (Bois, Sarazzin, Brustad, Trouilloud, & Cury, 2005). A possible risk factor for weight gain in adolescents could be a strong decline in physical activity level that is commonly observed in the stage of puberty, especially between the age of 13 and 17 years (Croezen, Visscher, Bogt, Veling, & Haveman-Nies, 2009). Insufficient physical activity is widely acknowledged as one of the primary mechanisms underlying the rise in excess body weight (Veugelers & Fitzgerald, 2005).

**Income of Parents**

Low-income preschool children have historically been regarded as at-risk for undernutrition. However, the prevalence of overweight in this group has recently increased. Low-income mothers whose parenting skills allow them to impose more structure and control on their children’s eating and activity patterns are more likely to prevent obesity in their children (Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, 2001). Children who live in high-income neighborhoods were half as likely to be obese and overweight than as their classmates who lived in low-income neighborhoods (Veugelers, Fitzgerald, 2005).

**Influence of obese family members**

Children may be at particular risk for later obesity because their mothers are more likely to be obese, and parental obesity increases the risk for offspring obesity, probably through sharing of both genetic and environmental factors. When explaining their attitudes and behaviors regarding children’s weight, mothers consistently intermingled anecdotes about their own weight histories, both as children and adults (Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, 2001). Mothers described feeling ambivalent about their own weight status and whether being overweight was a problem in their lives. Mothers believed they were unlikely to affect a child’s biological predisposition to be overweight (Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, 2001). Children who have two parents who are obese or overweight may have a genetic susceptibility to being overweight; a slight increase in food consumption may result in a larger weight gain for a child with overweight parents compared with a child with no overweight parents (Lawrence, Hazlett, & Hightower, 2010).

**Educational levels of parents**

Among mothers without any college education, only 11% of those with an overweight preschool-aged child believed that their child was overweight (Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, 2001). Children from families with lower educational attainment spend more time viewing TV than children from more highly educated families (Dennison, Erb, & Jenkins, 2002).

**Summary**

Childhood obesity has become a public health problem in industrialized nations. There are many risk factors that contribute to children becoming obese or overweight (Veugelers, Fitzgerald, 2005). A few of these factors include physical activity levels, amount of TV watched and video games played, socioeconomic status, education levels and income of parents, and influence of parental obesity. A child being obese affects more than just their health and their body; it also affects self-esteem and has negative consequences on cognitive and social development (Veugelers, Fitzgerald, 2005). There are also many health conditions that come from being obese such as type 2 diabetes, hypertension and hypercholesterolemia, and cardiovascular disease. There are many ways to help with preventing childhood obesity and this need to be taken into action (Veugelers, Fitzgerald, 2005).

**Research Design**

This was a quantitative study with a survey that assigns number values to the answers. The data collected for each participant were questions asking income level, educational status, physical activity levels, amount of TV watched and video games played, height and weight, and marital status.

**Subjects**

All subjects selected in this study were volunteers willing to take a survey. The volunteers were selected from individuals who were parents. The ages range from 18-55.

**Exclusionary Criterion**

The following exclusionary criteria were used to exclude subjects.
- Participants who have no children
- Participants who have children, not school aged

**Research Instruments**

A survey was administered to the participants to ask questions about their socioeconomic status, income, educational status, amount of TV watched and video games played, physical activity levels, height and weight of children and parents, marital status, and gender.
Procedure
No pilot study was conducted prior to this study. A survey was given out to participants via facebook and survey monkey. If the volunteers were not parents, then they didn’t continue with the survey. The survey is for parents ranging from ages 18-55. They answered questions which include: socioeconomic status, income, educational status, amount of TV watched and video games played, physical activity levels, height and weight of children and parents, marital status, and gender. When I had enough participants that took the survey I then looked at each factor to see if there was any affect towards childhood obesity.

Statistical Analysis
This study was a quantitative study with a survey made for parents. The same questions were given to each participant. Statistical Package for the Social Sciences (SPSS) version 18.0 was used to statistically analyze the data.

Results

Hypothesis 1:
It was hypothesized that since there is literature supporting income levels of parents affecting obesity, it is assumed that there is statistical significance. Analysis of the data yielded that there is actually significance correlated with income of parents and the BMI of their children.

Hypothesis 2:
The hypothesis states that there is literature supporting amount of video games played, therefore it is assumed that there is statistical significance. Analysis of the data yielded that there is a significant difference correlated with the amount of video games played and the BMI of the children.

Hypothesis 3:
It was hypothesized that there is literature supporting the amount of TV watched affecting obesity, it is assumed that there is statistical significance. Analysis of the data yielded that there is statistical significance correlated with amount of TV watched and the BMI of the children.

Hypothesis 4:
It was hypothesized that since there is literature on physical activity levels affecting obesity, it is assumed that there is statistical significance. Analysis of the data yielded that there is a significant difference correlated with physical activity levels of the children and their BMI.

Hypothesis 5:
It was hypothesized that since there is literature on educational status of parents affecting obesity, it is assumed there is statistical significance. Analysis of the data yielded that there is statistical significance correlated with the educational status of the parents and the BMI of their children.

Hypothesis 6:
The hypothesis states that there is literature supporting the influence of obese family members affecting obesity, therefore it is assumed that there is statistical significance. Analysis of the data yielded that there is a significant difference correlated with the influence of obese family members and the BMI of the children.

Discussion
There have been studies done that show the risk factors that affect obesity. If left unaddressed, the epidemic of childhood overweight and obesity may lead to amplified problems for individual children including acute and chronic physical and psychological complications-and for the larger social environment (Lawrence, Hazlett, & Hightower, 2010). Children that live in high-income neighborhoods are half as likely to be obese and overweight then kids who live in low-income neighborhoods. Having a TV set in a child’s bedroom is strongly associated with increased risk of childhood obesity. Research suggests that physical activity levels during childhood could partially predict physical activity levels in adulthood (Bois, Sarazzin, Brustad, Trouilloud, & Cury, 2005). Children that are from families that have lower education spend more time viewing TV putting them at higher risk for obesity. If the parents are obese, it puts a high risk on the child to be obese. Childhood obesity has become a huge public health problem and there are many risk factors that contribute. These risk factors include income levels of parents, amount of video games played, amount of TV watched, physical activity levels, educational status of parents, and the influence of obese family members.

Summary
This study measured the risk factors that contribute to childhood obesity over the course of 16 weeks. Sixty one females and 4 males who were all parents participated in this study. The age range for the participants was from 18-55. The subjects volunteered to take a survey. They were recruited from facebook and survey monkey. Subjects for this study were excluded if they were not parents and if they were parents but did not have school-aged kids.
A survey regarding childhood obesity was given to the participants. They answered questions which include: socioeconomic status, income, educational status, amount of TV watched and video games played, physical activity levels, height and weight of children and parents, marital status, and gender. There were 200 surveys given out and just 65 were given back.

Findings

- The first hypothesis stated that the income level of parents does affect obesity. After data collection, it was determined that it does in fact affect obesity.
- The second hypothesis stated that the amount of video games played does affect childhood obesity. After data collection, it was determined that it does affect obesity.
- The third hypothesis stated that the amount of TV watched does affect childhood obesity. After data collection, it was determined that it does affect obesity.
- The fourth hypothesis stated that physical activity levels do affect childhood obesity. After data collection, it was determined that it does affect obesity.
- The fifth hypothesis stated that educational status of parents does affect childhood obesity. After data collection, it was determined that it does affect obesity.
- The sixth hypothesis stated that the influence of obese family members does affect childhood obesity. After data collection, it was determined that it does affect obesity.

Conclusions

All the hypothesis ended up being correct. The six factors that were stated to be significant were in facto significant to affecting obesity. The income level of parents, amount of video games played, amount of TV watched, physical activity levels of the children, educational status of the parents, and the influence of obese family members all affect childhood obesity in some way. If the children played more video games and watched more TV then doing physical activities, they are at higher risk of obesity. If parents are overweight, then the children are more likely to be overweight. Obesity is a huge issue all over the world and it can be stopped by looking at these factors and seeing how they do affect obesity.

Recommendations

It is easy to see that the risk factors that were researched do affect childhood obesity. By seeing the factors that do affect obesity, you can then change the lifestyle in which you live. A couple things to do is not let your child just set in their room watching TV and playing video games all day and night. Another thing to do is have them play outside so they can be active. Also if the parent is overweight or obese, they need to work on losing weight so it doesn’t have an impact on their child because if the child sees that their parents is overweight they will think it is ok to be overweight. Obesity can be fixed easily; it is not something hard to research.

References


