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Junk Food and its Link to Childhood Obesity

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Abstract

Childhood obesity has been a growing epidemic not only in the United Sates, but around the world. The aim of this study is to determine the relationship of childhood obesity to how available junk and fast food is to adolescents. Two hundred students, one hundred boys and one hundred girls, ranging in ages six to twelve years old will take part in a survey as well as physical examination. Additionally, one parent or guardian of each student will be asked to complete a survey. The surveys will determine how often and readily available junk food is to the children, the average level of exercise each child is takes part in, and any dietary or medical restrictions the child has to follow. A physical examination will further tell us any medical issues each child has and will determine the BMI of each child. The information gathered from the surveys will be compared to the information gathered from the physical examination to determine a correlation between junk and fast food and how it relates to childhood obesity. It is predicted that with an increase in junk and fast food and a decrease in physical activity, the BMI of the child will be higher. Results of this study will be used to help determine ways to modify children's' diets, make junk and fast food harder to obtain for children, and persuade parents and guardians to change the dietary behaviors of their children through concrete evidence.

Keywords: obesity, young children, diet, junk food, fast food, BMI

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Statement of Problem

Childhood obesity has become a growing epidemic in not only the United States, but around the world. With high levels of saturated fats, sodium, and sugar, junk food has major links to causing obesity in adults as well as children. In the United States, many adults do not have the time or the means to cook for their children three times a day which means junk food and fast food make up a significant portion of children's diets. In 2012, the percentage of children aged six to eleven years old increased to nearly 18% from 7% in 1980. In 2012, more than one third of children and adolescents were diagnosed as overweight or obese. (as cited in Almuhanna, Alsaif, Alsaadi, & Almajawal, 2014).

Overweight can be defined as being in the 85th to the 95th Body Mass Index percentile for their age. While, obesity is defined as being in the 95th or above BMI percentile for their age (as cited in Kar, Dube, Kar, 2014; Sahoo et al., 2015). The current study focuses more on childhood obesity however, overweight participants on their way toward obesity will be reviewed and discussed.

Selected Literature Review

Obesity can be caused by several genetic, behavioral, and environmental factors which can include; diet, amount of physical activity, medical conditions, gender, sociocultural, and age. (as cited in Almuhanna et al., 2014; Kar et al., 2014; Sahoo et al., 2015). The most basic cause of obesity results in a caloric energy imbalance where more calories are being taken in than are being expelled. Obesity is one of the main causes of avoidable disease burdens (Tarro et al., 2014). Childhood obesity can be linked to onset adult obesity, insulin resistance, type 2 diabetes

mellitus, metabolic syndrome, as well as cardiovascular, orthopedic, neurological, hepatic, pulmonary, and renal disorders (as cited in Kar et al., 2014; Sahoo et al., 2015)

Datar and Nicosia (2012) found that junk and fast food availability provided a large issue when it came to middle and highs school students. However, since there is so much legislation and regulation regarding junk food in elementary schools, there is little availability of junk food to children. It can be inferred however, that if junk food was more available to students in this age range, the risk of obesity would increase. In Davis and Carpenter's 2009 study, they found that students who lived closer to fast food restaurants consumed fewer servings of fruit and vegetables, consumed more servings of soda, and were more likely to be overweight or obese. Almuhanna et al. (2014) found that obesity rates in Saudi Arabia were directly correlated with the amount of times participants consumed fast food. Where if participants were consuming more fast food, they had a higher risk of being overweight or obese. This study also researched socioeconomic status and attempted to draw a conclusion on how this impacted the children's obesity rates. No direct correlation could be found between the parent's income and their children's weight. In fact, most overweight participants came from families of high income.

It is known that a balanced diet can help contribute to maintaining a healthy weight. Eliminating sugary beverages and snack foods, which both contribute to a higher caloric intake, can help to decrease the risk of childhood obesity (Sahoo et al., 2015) Tarro et al. (2014) studied the impact on creating and intervention program that included dietary and physical requirements. When provided with the intervention the study showed that it reduced the risk of obesity in boys by 4.39% however, there was no significant change in obesity rates for girls. This study shows that with the help of schools and other programs, dietary interventions along with physical activity could reduce the risk of childhood obesity.

It is known that children have less free time available compared to past generations. This is due to the large number of organized activities that children take part in. This is also seen with a reduced rate of children participating in sedentary activities like watching TV or playing video games. However, a large number of students are still insufficiently active (Sturm, 2004) It is known that excessive participation in sedentary activity increases the risk of obesity (Kar et al., 2014)

The purpose of the present study is to determine if there is a correlation between the amount of junk or fast food that is consumed by children, their amount of physical activity, and their BMI. The use of information from both the child and the parent or guardian will help to ensure that information is consistent and valid. The use of the BMI index will help to determine if poor dietary and physical behaviors are linked to childhood obesity. It is known that the closer the proximity and higher readily availableness of junk and fast food are related to childhood obesity.

Students chosen to participate in the study are in the six to twelve years old range which is consistent with the current children age period (Almuhanna et al., 20014). Upon the completion of the surveys and physical examination of the students the prediction is if the participant consumes more junk or fast food, there is a higher chance for the participant to be obese. The second hypothesis is that if the child participates in a lower amount of physical activity outside of school then there is a higher chance that the participant may be obese.

Method

Participants

Two hundred students, one hundred boys and one hundred girls, ranging in ages six to twelve years old from ten randomly chosen schools in the United States ranging in demographic

will be used as participants. Informed consent forms will be provided to students and will require consent from legal parents or guardian. The parent or guardian must also consent to filling out a questionnaire that is provided with the child's consent form. An incentive will be used to motivate students to get their forms signed as well as getting parents to complete the questionnaire provided.

Design

This cross sectional study will view participants' dietary and physical activity habits and compare them to a dependent variable being BMI. The study will look at how many times children in the study are being provided junk or fast food and how active they have been on a weekly average. Children participating in the survey will be asked to visit with an approved physician provided at each school for a physical examination. The answers to both the student and the parental questionnaire will be compared to the results of the physical examination to see what conclusions about junk food, physical activity, and obesity can be drawn.

Materials

A questionnaire (See Appendix A) printed on a plain white 8.5 x 11-inch paper will be provided along with a consent form to students for their parents. Four questions (See Appendix A) on the questionnaire will ask how often the child is provided with junk or fast food, how often the child participates in physical activity, and if the child has and medical or dietary restrictions. The questionnaire and consent form should then be sealed in a plain white envelope that is provided. A similar questionnaire (See Appendix B) printed on a plain white 8.5 x 11-inch paper will be provided to the student upon completion of the signed consent form and completed questionnaire from their parents. The questionnaire will be administered with the approved physician that is in charge of delivering the physical examination.

Procedure

Twenty students, ten boys and ten girls, from each of the ten chosen schools will be given the parent questionnaire and consent form. Upon completion of the consent form and questionnaire, the parent should seal both forms into the provided plain white envelope. Once the student brings back the envelope with the completed forms, they will be asked to visit with the approved physician. The physician will remove the forms from the envelope to ensure that they ae completed in entirety. Next, the physician will ask the child the questions on the questionnaire and circle the answers that the child has provided. The physician will then complete a full physical examination to determine the height and weight of the child and determine if there are any medical conditions that were unknown by the guardian or participant. The physician will then submit their findings along with the two completed questionnaires and the parental consent form.

Expected Results

The responses to the questionnaires from both the child and the guardian will be evaluated to ensure that there is no drastic difference in answers as this could interfere with the validity of the study. We will use the physical examination results by taking the height and weight of each child and calculating their BMI. We will then determine if the child is underweight, at the appropriate BMI, overweight, or obese. These results will be compared to the answers from the surveys to determine which type of correlation exists between how much junk or fast food the participant is consuming, to their level of physical activity, and finally to their BMI category.

Discussion

The results of this study will be used to determine if junk or fast food consumption and level of physical activity have an impact of children's BMI. The results will be reconsidered and determine if the initial hypothesis is valid or invalid. If the results are conclusive and support the initial hypothesis, then an increase in junk or fast food and a decrease in physical activity will produce a higher BMI in children and therefore increase the risk of childhood obesity.

Recommendations for parents or guardians can be made on how often children are consuming junk or fast food and how much physical activity their children partake in each day. Flaws and limitations in current research will be identified. Recommendations for future research will be explained and future research will be able to use this study for review and references. Finally, the study will be summarized and the importance of this study will be highlighted.

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Appendix A

1) How many times per week does your child consume fast food or junk food? (Circle One)

0 times per week 1-2 times per week 3-4 times per week 5 or more times per week

2) How many times does your child have a home cooked meal per week? (Circle One)

0 times per week 1-2 times per week 3-4 times per week 5 or more times per week

3) How many days per week does your child spend 2 or more hours doing physical activity outside of school? (running, dancing, playing sports, etc.) (Circle One)

0 days per week 1-2 days per week 3-4 days per week 5 or more days per week

4) Does your child have any medical or dietary restrictions that you are aware of? (Circle One)

No Yes

If so, what are they? _____

Appendix B

1) How many times per week do you consume fast food or junk food? (Circle One)

0 times per week 1-2 times per week 3-4 times per week 5 or more times per week

2) How many times do you have a home cooked meal per week? (Circle One)

0 times per week 1-2 times per week 3-4 times per week 5 or more times per week

3) How many days per week do you spend 2 or more hours doing physical activity outside of school? (running, dancing, playing sports, etc.) (Circle One)

0 days per week 1-2 days per week 3-4 days per week 5 or more days per week

4) Do you have any medical or dietary restrictions that you are aware of? (Circle One)

No Yes

If so, what are they? _____