Group Project – BMI vs. T.V. Watching

Math 1040 – Statics

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Purpose of the study:

Our research question is "Is the amount of television watched per day by children between the ages of 8-10 related to their BMI?"

Study Design:

To answer this research question, we will gather data as follows: Each one of us lives in a different side of the greater Salt Lake area. Cida lives in North Salt Lake, Marcia in West Salt Lake and Audra in East Salt Lake. We will collect data from 30 children, 10 from the three different areas. They will be children in our religious groups, neighborhood, or community. We will ask their parents for their age, weight, height, gender, and average amount of television that is watched per day. From the data collected we will calculate the BMI (Body Mass Index), which is a number given for the height versus the weight. We will record our results and compare after collecting.

The Data, Statistics and Graphs:

On pages that Follow.

Difficulties/Surprises Encountered:

We encountered several biases. One being, parents were uncomfortable answering questions about their children's weight, and average amount of T.V. viewed per day, which may have led to response bias. We also believe due to the wording of the question and the information needed, it affected the validity of the study.

We also found that it was difficult to find enough people to interview about their children. Most people we found were not comfortable answering questions at all about their children, even before they knew what the questions were. It would seem that the only people that were comfortable enough answering questions about their children were people that we already had a previous relationship with.

Analysis:

After calculating our data into excel and making corresponding graphs we found that both our variables one and two, or minutes of T.V. watched and BMI, were both skewed right in their individual histograms. Most children are between a certain range for BMI and television watching with outliers to the right indicating that some children scored significantly higher in both areas. When we compared the two tables together into a scatter plot we found a moderate positive linear correlation. So there is correlation between minutes in front of the television and BMI. Our calculated R value was 0.536522 when compared to table II in the book for a sample size of thirty was 0.361. Because our R value is larger we know that our correlation is significant.

Interpretation and Conclusion:

From the correlation found using our R data versus the R data from table II we found that our correlation was significant. From this information we can conclude based on our experiment that children's BMI between the ages of 8-10 can be affected by the amount of time spent in front of the television. So to answer our question we do believe that the amount of television watched per day by the child is related to their BMI. I believe our study has shown that T.V. can be a contributing factor to unhealthy weight gain and body mass index. Other factors have been proven to contribute to a high BMI such as diet, lack of exercise, health problems, and genetics, however for our study purposes and based on our data alone we are led to believe that the amount of time spent in front of the T.V. is a significant factor in the BMI of the child.