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Is there a link between technical advances and the number of obese people in the United States?

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Is there a link between technical advances and the number of obese people in the United States?

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X_____

TO THE PACE UNIVERSITY PFORZHEIMER HONORS COLLEGE:

As thesis advisor for Amanda Pneuman

I have read this paper and find it satisfactory.

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Thesis Advisor

_____

Date

Table of Context

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Précis:

Obesity is an ongoing epidemic in the United States. Multiple studies have been performed on young children but not many have looked at college students. When the children grow up they make their own choices and their own lifestyle. With each new generation there is also in increase in the number of technological advances. The question this paper asks is whether there is a correlation between technology and obesity? It was hypothesized that there would be a direct correlation between the amount of hours spent using technology and the students' body mass index (BMI) values**.** This has been a topic of interest of mine because of my involvement in the track and field team in both high school and at Pace University. Also I am a very health conscience person and took an intense health class in high school. I often notice the increase of overweight people while walking the city and also the comparison of New York to Europe. When I travelled to Spain I noticed the difference in lifestyle and in weight.

The approach I took to solving this problem was the administration of a survey to Pace University students. The survey asked general information such as age, weight, and height. It also then asked for the amount of hours spent performing specific activities in a day. The activities included using a computer, playing video games, watching television, performing

aerobic activities (walking, jogging any activity that uses large muscle groups, can be maintained continuously, and is rhythmic in nature) and playing a sport/intense work out. These activities reflected the usage of common technology and work outs. The survey also questioned the participants on their weekly eating habits, but asking for the amount of times in a week they consumed fast food and home-cooked meals. From the anonymous survey results the participants BMI's were calculated using the formula (weight in kg)/height in meters)^2. The BMI values were than plotted and categorized into underweight, overweight, obese, and normal weight ranges by means of the Center of Controlled disease classifications. Results for the amount of hours spent performing the activities were also plotted. Results were compared to see if the high BMI values related to the most number of hours spent using technology. Also the food consumption was plotted and analyzed. The results showed that there is a correlation between the number of hours spent using technology and the participants' BMI values. The hypothesis was support by the data. Pace university students who had a high BMI used technology more than 4 hours a day. The results showed that over 24% of the participants were overweight or obese. There were only three students underweight and 73.4% of within normal range. The fast food consumption was not high which could be due to the Pace University health conscience menu in the cafeteria.

Future research relating to obesity and technology could be a controlled experiment with a group of college students not being able to use technology for a month and comparing their weights to a typical group of college students. Also personal interviews with college students about their habits and weight could be another angle to approach this problem.

 Abstract

Obesity is defined medically as having a BMI of over 30kg/m^2. BMI is body mass index which is calculated by (weight in kg)/height in meters)^2. Obesity is an ongoing problem throughout the United States with over half the states having 20% to 24% of their population being classified as obese. In 2003 more than 300,000 people in this nation died from an illness that was related to being overweight or obese. Obesity affects many aspects of life including social skills, job opportunities, financial issues, and most importantly, health. What is causing these increasing statistics for obese Americans? There are multiple possible causes for obesity including genetics, culture, and medical history, but another factor to consider is technology. Over the years the American culture has adapted too many new technical advances. Through statistics for America and a survey taken by Pace University students, a link between technical advances and the number of obese people in the United States was concluded. Surveys have been done by the Center of Controlled Disease about the number of obese people in the country for multiple age groups. Pace University students were questioned about their TV, computer, video game, habits along with dietary habits and exercise routines. This data compared with the trends in new technical advances shows that with each new game system, TV sitcom, or new computer game Americans add on the pounds. The results showed that over 24% of the participants were overweight or obese. There were only three students underweight and 73.4% of within normal range. The hypothesis of there being a correlation between technology and obesity was supported by the data. There was less usage of technology by the students with the lower BMI values.

Literature Review:

Obesity is a term heard often in today's society. It has become an important medical and social interest as more people put on too much extra weight. There are many research groups doing work on obesity related problems and a lot of new diets being introduced as an effect of this increase in overweight Americans. Many people hear about it being an issue, but not many know the actual statistics as to how many people are affected by this or what is causing it.

Surveys show that more than half the states in America have 20% and 24% of the population classified as obese (obesityinamerica).Statistics published by The Center of Disease Control and Prevention shows that in the early 1980's most of America only had obesity percentages of 10-15. These numbers then continued to rise each year. The most current data of 2006 show percentages of 20-30 and some even greater than 30% (CDC). On Wednesday, July 16th of 2003, Richard H. Carmona, the surgeon general of the US Public Health Service gave a statement regarding this issue of obesity in America. He refers to obesity as a "crisis" and the "fastest-growing cause of disease and death in America". He spoke about how obesity is preventable, but yet almost two out of three Americans are either overweight or obese. Mr.

Carmona focused on how obesity is avoidable and how it is reversible in children. American children have become immunized and are less likely to smoke or get pregnant as teens, but yet still large numbers of them are overweight. Over the years infant mortality has fallen and overall 82% of American children are in very good health. The statistics that he mentions say that in the 1960's only about 4% of children from the ages 6-17 were overweight, and now the percentage is over 15. Also, he mentions how these numbers, even though specific to childhood obesity, cause adult obesity because the overweight children have to grow up and about 3 out of 4 overweight teens remain overweight throughout their life.

Genetics is also a cause of obesity. People can have a predisposition to obesity because of their family history, but that does not mean the person is defiantly going to become overweight. A predisposition does increase a person's chances of becoming obese by approximately 25% to 30%. Your genes can make you vulnerable to gaining weight, but you can still maintain a normal weight. Medical problems, such as a metabolic disorder, can be a cause for the obesity trends. Metabolic disorders, like low thyroid function or a hormonal imbalance, can cause a person not to metabolize food efficiently. Hormones can affect how calories are processed, in disorders like hyperthyroidism (obesityinamerica). The St. Vincent Health Service says that only less than 2% of every case of obesity is caused by these disorders. This small percentage cannot account for the 20%-30% of America that is obese (stvincentshealth).

A study done by researchers from the University of Illinois-Chicago and University of Michigan showed that 26% of the commercials teenagers are watching, sell food products and a large portion of these products are high in fat, sodium, and sugar (Koshuta). Technology allows companies to surround people with their product. If a person is constantly seeing commercials or signs for junk food then he or she is going to eat more junk food; it's the power of suggestion.

An experiment done by Stanford University showed the effects of television watching on the amount of weight gained by the students. The experiment was done on one hundred ninety two, third and fourth grade students, who went to two San Jose elementary schools. The schools were similar in ethnic composition, socioeconomic standing, and scholastic achievement. One school was the control and the students went about their normal lifestyle, but recorded how much television they watched, exercise they did, and what they ate. The experimental school was given lessons about television reduction and was first told to go ten days with no television at all and then began encouraging them to reduce the number of hours spent watching television a day. The experiment included TV shows, videos, or playing video games; activities that children spend more than four hours a day doing, which is more time than they do most other activities besides from sleeping. The results of this experiment showed that students in the controlled school studied to date". He also says that this TV reduction program shows potential for helping to prevent childhood obesity. Childhood obesity has doubled over the last two decades and this program is able to focus on reducing the usage of TV and in effect lower the weight of the children, who will later become adults (standfordonline). Children spending less time watching television were also eating less because most children tend to snack while viewing. People also become unaware of how much they are eating when they are watching TV because they keep reaching for the next hand full of popcorn or chips. This experiment clearly shows the relationship between technology and the rate obesity is increasing. In the past, before this new technology children wouldn't be playing video games, but doing more physical activities. The children in this experiment were forced to find an alternative activity besides from watching television. What makes this experiment unique is that no alternative activity was forced upon

these students in replacement of the TV, therefore it could not have been the effect of the other activity, but instead the effect of the isolation from the specific media. (Leslie).

The American Journal of Preventive Medicine published a paper stating that men are more at risk for becoming obese if they work more than a six hour day at a desk job. Their results were compared to people who only spent under an hour a day sitting at a desk. This proves that the long hours spent being sedentary at work are not allowing the person to be active and burn calories (he's fit).

A New York Times article from 1997 commented on how the Big Mac price was going to be $0.55. This article stated that McDonald's feeds over 7% of the United States population each day. The number of overweight Americans rose about 33% in the 1980's based on the Federal Centers for Disease Control and Prevention in Atlanta and this rise correlates directly to an increase in the number of McDonald's outlets in the US. There were only 5,213 outlets open in before 1980's and in 1997 the number was over 12,000. Also this article points out how a meal of a Big Mac, a large order of french fries, and a 32ounce soda is about three quarters of the government's recommended daily allowance of 66grams of fat. This meal totals to be 50grams of fat and 1012calories!

The American Heart Association provides many statistics about how children's lifestyles are becoming lazier and what changes have caused this. It states that 92% of elementary schools in the nation don't have physical education classes each day all year round. Also schools are cutting back on allowing kids time to play outside. Over half of the elementary schools in New York City have playgrounds provided for the children to enjoy. About one third of the elementary schools do not have a recess period for their students each day. Also students are more likely to take a bus or car to school compared to the 13% that walk there. American

children are also more likely to be playing video games or watching television compared to being outside. The statistics from this association say that a typical American child will spend four to five hours a day performing these sedentary activities. Sixty percent of children from the ages nine to thirteen do not participate in any organized sport or physical activity program after school and close to 23% do not do any physical activity at all.

A survey done by the Kaiser Family Foundation in 2005 titled "Generation M: Media in the Lives of 8-18 year olds" in Menlo California showed that the average time spend watching TV, using the computer, and playing video games were 3hrs 51mins, 1 hr 2mins, and 49mins, respectively. The survey also showed that boys spend more time playing video games than girls with the statistics showing an average of one hour twelve minutes for boys and twenty five minutes a day for girls. The tally of the survey resulted in a typical American child spending approximately 44.5 hours in a week using media outside from school. A correlation between having a television or computer in the child's bedroom was also found during this survey. If a the computer is in the child's bedroom they will spend about 45mins more per day using it compared to someone who doesn't have it in their own room. Similarly, there is an hour and a half per day increase if the television is in the bedroom. These high statistics apply to the 68% of children who have televisions in their rooms and the 31% that have computers there.

A study done at the University of New Hampshire in 2007 showed that more than one third of the students were overweight or obese. The students were given questionnaires about their lifestyle and eating habits. They were questions about their exercise habits, alcohol intake, fruits and vegetable intake, smoking habits, and had their BMI calculated along with screening for blood pressure, glucose, triglycerides, total cholesterol, and high density cholesterol. The results showed that 23% of men and 34% of women participated in less than a half hour a day of

physical activity. There were high statistics for metabolic imbalances and high cholesterol. This study caused student awareness and now the trend needs to be compared to other colleges.

Many of the current studies have been done at varying age groups from small children to teenagers. There is a lot of unanswered questions as to how do the children grow up to be? How do they choose to live their lives when they are on their own and making their own food choices? The study in New Hampshire rose awareness and more needs to done in this age group. If a person was obese as a child do they continue this lifestyle as they grow up? Is there more of a need for technology as a person enters a career and has a family? Do college students spend more time on a computer than running on a track?

Introduction:

Living in America, one cannot help but notice an increase in waist size in many people; when sitting on the plane and a person takes up more than one designated seat, or when getting on a roller coaster and the lap bar cannot be closed because of person's stomach. These are common problems for a large percentage of people living in America. When reading literature about obesity in this country it showed that there has been a great increase in this past decade.

Another trend that an American notices on a day to day basis is the increase in electronic devices. New technology is being introduced each month and people are spending many more hours performing sedentary activities. Technology not only affects our work, but also the foods we eat. Every fast food chain utilizes a new machine in order to produce their food faster, cheaper and in larger quantities. As the price goes down the nutrition does as well. Studies have shown that over 15% of children ages 6-17 are overweight; a number that used to be only 4% in the 1960's (Camona). Also a study done by Standford University on third and fourth graders showed that when the experimental group was not allowed to watch television they had less of a

weight gain then the control group, which continued with their normal television habits. This and many other studies showed a connection between technology and the increase obesity rate in America. Currently 24% of the population is classified as obese.

Most studies have been done on children, but what about once these children get older and are able to make their own decisions? When teenagers go to college, they typically are living on their own for the first time and are able to make decisions of their own about what to eat, how much to exercise, or what activities to do. One study in New Hampshire did a questionnaire amongst their students about their BMI, exercise habits, alcohol consumption, nutrition, smoking habits, and other lifestyle aspects. The results showed that 23% of the male students and 34% of the female students performed less than 30 minutes of physical activity a day. Time management is their responsibility and finding time to exercise and eat right is sometimes difficult. A college student's life is filled with technology each day. Their classes require many papers to write, tests to study for, and research to perform; all sedentary activities. Technology is the leading cause of weight gain in America, whether it is due to sedentary activities or bad eating habits. This study was done to see if there is a trend between technical advances and obesity amongst college students. It was hypothesized that there would be a correlation between the usage of technology and the students' BMI.

Design:

A survey was conducted to determine if there is a link between technical advances and the number of obese college students in the United States. These survey results were then compared to national statistics for obesity in America and the trend was analyzed. Studies have shown in elementary school students a correlation between the number of hours the children spent watching television and their weight gain. Also the amount of time spent outside on the

playground has decreased over the years and the number of hours spent performing sedentary activities has risen. A survey in the University of New Hampshire showed that amongst their college students the statistics of obesity were on a rise. My main hypothesis for this issue is that the number of obese college students is correlated to technical advancements made over time.

Subjects:

A survey was conducted at Pace University to gather information about the lifestyle of the student body and to analyze for a link between their weight and how much time is spent using technology. The subjects were random Pace University students from the ages 18-22 years old. This random voluntary participation in the survey caused there to be a variety of different nationalities, genders, ethnicities, religions, and cultures. All of this leads to the elimination of biased to a particular group of people. The survey was in a question-answer format (see appendix). Students that participated in the survey were generalized to represent the entire Pace University student body and further to all college students in the US.

Measurements:

Obese for the terms of this survey was defined by the medical definition of having a body mass index (BMI) of over 30kg/m^2, with BMI calculated by squaring the quotient of the weight in kilograms divided by height in meters. Sedentary was defined as a state of inactivity, while in the sitting posture. Sedentary activities for this survey were watching television, playing video games, working on a computer, and resting. For aerobic activities the definition given by the American College of Sports Medicine was used, which states "any activity that uses large muscle groups, can be maintained continuously, and is rhythmic in nature." Examples of this would be bike riding, dancing, jumping rope, jogging, walking briskly, stair climbing, or skating. The

survey also includes activities such as playing a sport or performing an intense training work out.

A typical dish for all three meals of the day was defined as what food groups are eaten most often for daily breakfast, lunch, and dinner. The question asking how many times a week the person ate at a fast food included all chains serving "food that can be prepared and served quickly" (Merriam Webster definition), for example McDonalds and Burger King. A home-made meal was defined as one cooked with all ingredients how it was prepared known to the person. This allows the person to monitor the nutrients of their food and the techniques used to cook the ingredients.

Procedures:

Research was conducted on obesity trends in America and studies done on the effects of technology on a person's weight. Statistics about the percentage of obese Americans was found first leading to an interest in the possible causes of it. Also information about the harmful effects of being overweight was found, which provoked an urgency to come up with a cause for this growing problem. When noticing that the obese numbers increased in the last years it was also noticed that many new game systems were introduced and new technology gadgets were also marketed. This correlation led to further research on how drastically technology affects people's daily lives. Also a reflection on personal observations of people in the city led to a hypothesis of their being a link between technological advances and obesity. The survey was written up and distributed to Pace University students to anonymously fill out (see appendix). This surveys results will be analyzed to either support or nullify this hypothesis. Subjects for this survey were told that the survey information would be used for a research paper on obesity trends and that

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their information would not be given out or mentioned in the paper. From the subjects point of view it was a survey to benefit a fellow student doing research and raise awareness about a nationwide problem.
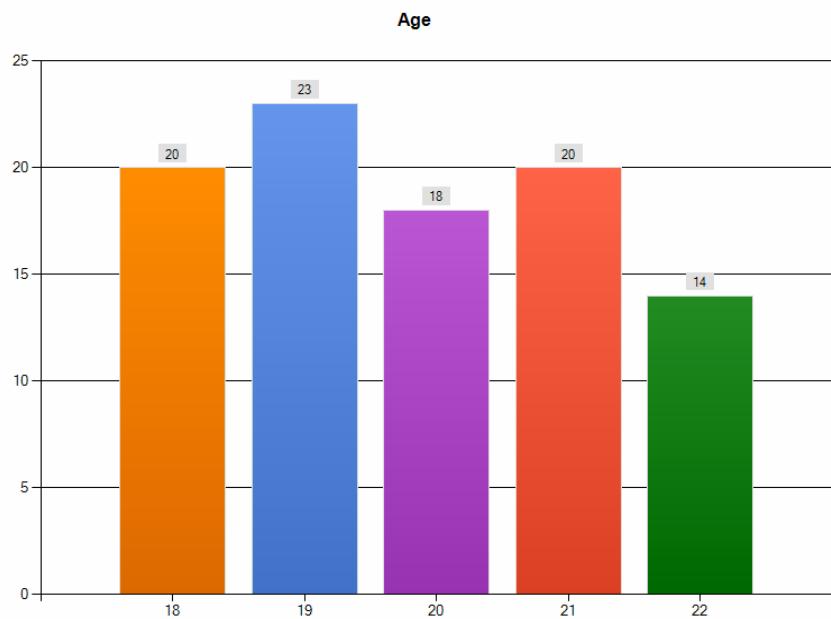
Results:

Figure 1: Age range of Pace University students who participated in survey

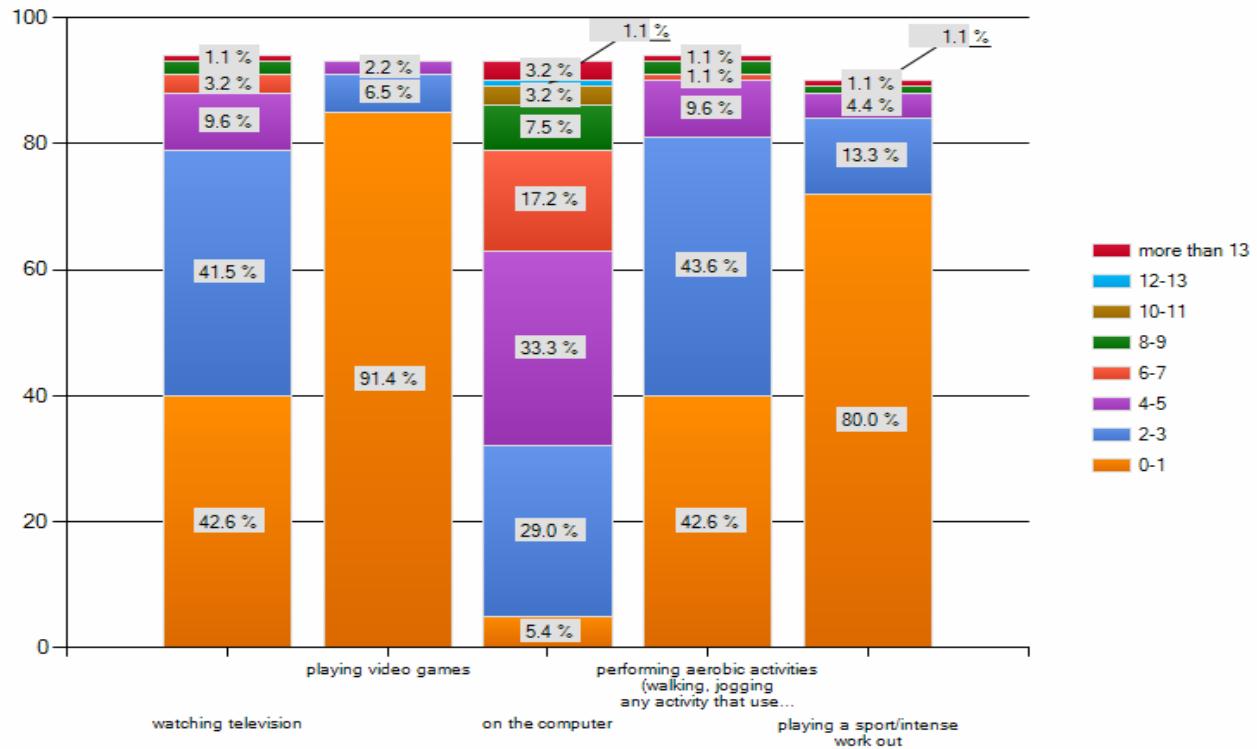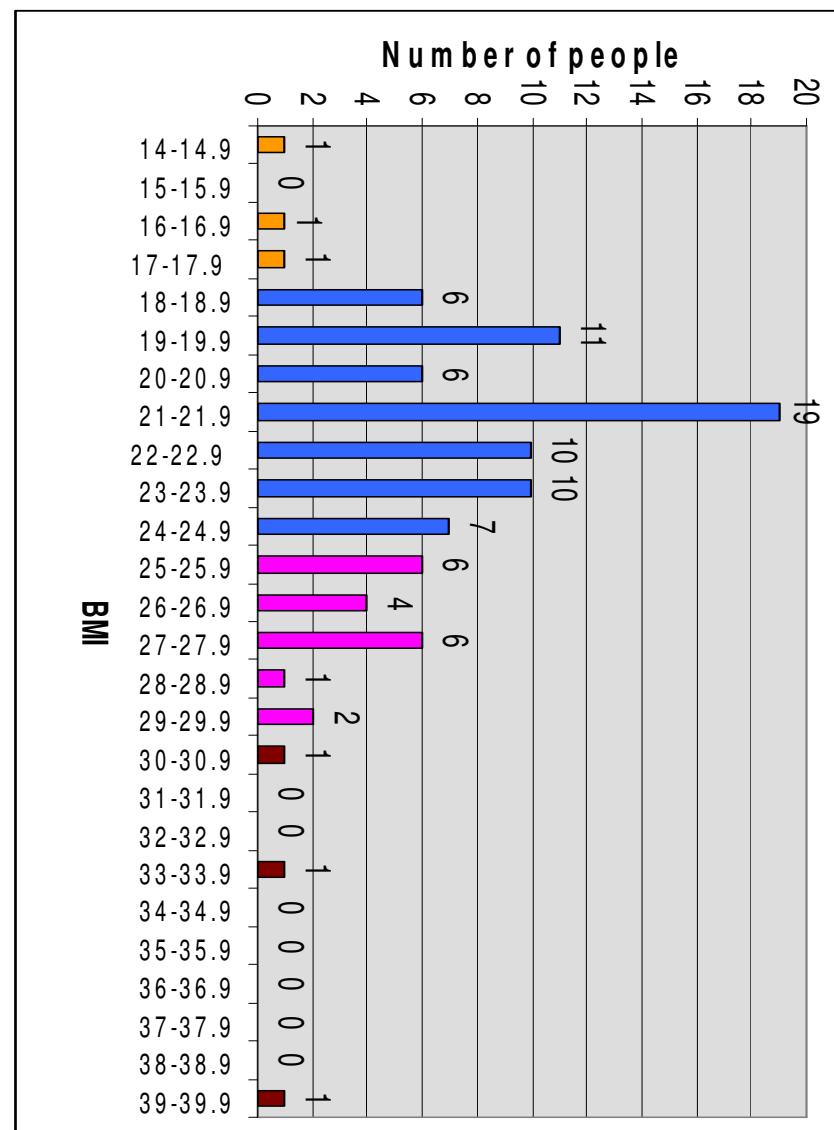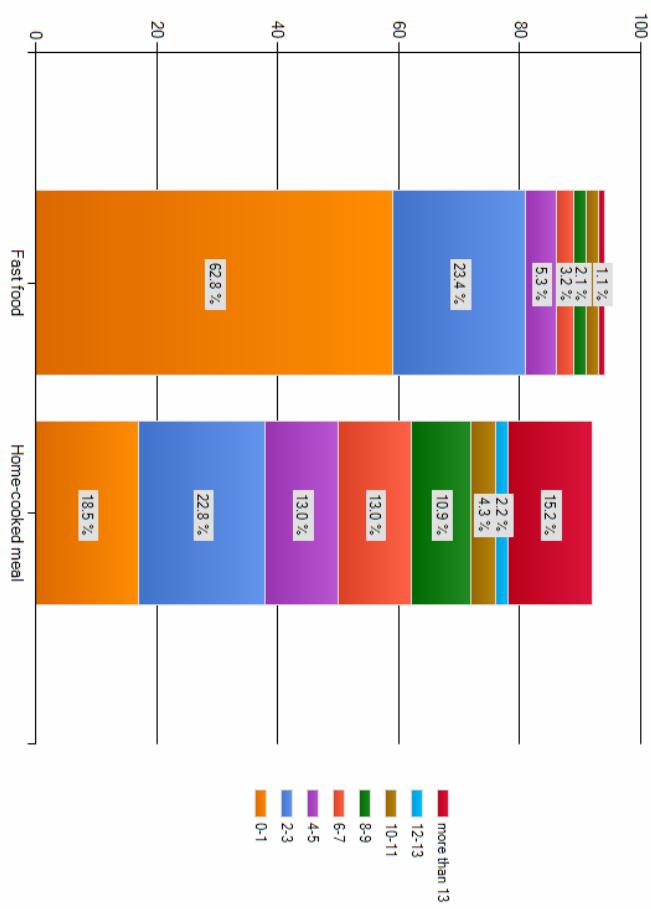**How many hours a day do you spend doing the following:**

Figure 2: Amount of time people spend performing sedentary activities, aerobic activities, and intense work outs

Figure 3: Number of times a week students ate fast food and home cooked meals

Figure 4: Body Mass Indexes of participants

BMI Categories:
Underweight = <18.5
Normal weight = 18.5-24.9
Overweight = 25-29.9
Obesity = BMI of 30 or greater

Table 1: BMI classifications set by CDC

Average BMI	23.00338
Maximum BMI	39.9554
Minimum BMI	14.98964
Number of obese participants	6/94 = 6.3%
Number of overweight participants	17/94= 18.08%
Number of normal range weight participants	69/94=73.4%
Number of underweight participants	3/69= 3.19%

Table 2: BMI results classified into categories

Discussion/conclusions:

This study was performed on college students because as people get older they begin making their own decisions. They are able to choose what foods to eat, how much time to allot to certain activities, and whether or not to exercise. Growing up as a child's parents are a strong influence on the dietary habits of the person and also how they spend their time during the day. Many of the past studies performed about obesity were done on young children, but what happens to them when they go to college is understudied?

This study had an even distribution of age, ranging from 18-21 years old. The hypothesis that there would be a correlation between technology and obesity was supported by this research because it showed that the less technology that was used by the students, the lower their BMI was. The trend was that the lower body mass indexes were linked to students that spent the least amount of hours performing sedentary activities that used technology. The BMI of the participants was calculated by means of taking their answers for their weight and height and

converting them to kilograms and meters, respectively and then applying the BMI formula of (weight in kg)/height in meters)^2. The results showed that 24.38% of the surveyed students were overweight or obese based on BMI. Intense sports had 6.7% of people spending more than four hours playing. Playing video games had least amount of time spent with 2.1% of students spend more than four hours. This could be because computer games have become more popular or due to the fact that video games do not appeal to age range surveyed. Computer usage was sedentary activity accounting for major of the hours spent in a day with 65.6% of the students spend more than four hours a day using one. Computers were expected to be the most popular technology because college students have to do research projects and other homework assignments. Emails and games are also very popular with this age group so the hours keep adding up.

The results also showed that fast food was not commonly eaten throughout a week with 86.2% consuming it less than 4 times a week. This could be due to obesity awareness in country and also the promotion of healthy eating within Pace University. Pace University is promoting healthier eating in its cafeteria and that is typically where students eat, due to the mandatory meal plan money included in tuition.

Possible variables for this study include the skewing of the weight entered by participants because of self-consciousness of true weight. People are becoming weight self-conscience due to being surrounded by new diets, models, and actors. There is an increase in the promotion of diets, such as Weight Watchers and people are beginning to try to follow them. Due to this people may have entered weights lower than they actual are because it may be their ideal weight or they don't feel comfortable with their current weight. Also another variable could be an approximation of hours spent in a day performing activities. When students fill out surveys they typically are rounding their responses, therefore the actual numbers may differ.

Further study based off of this survey could be the performing of interviews with college students. This would allow for a one on one question and answer session about their daily habits and their reasons for their choices. Also an accurate weight and height measurement can be made. Another future experiment could be to isolate a group of college students and monitor their usage of technology but not limit it and compare their BMI values to another variable group of students who are unable to use technology

The conclusion was that there is a relation between the usage of technology and body weight. The less time spent using technology the lower the BMI of the student.

Annotated Bibliography

Bariatic Weight Loss Center of Excellence. 2006. St. Vincent Health. 1 Sept. 2007
        [http://www.stvincent.org/ourservices/bariatrics/about/causes/default.htm]

        This source provided a statistics about the amount of obesity cases that can be attributed
to medical disorders. Also it proposed eight possible causes of obesity and does into detail about
how why. The site was generalized and did not include many numerical values, but it allowed the
reasons to be further research via other sources.

Carmona, Richard, M.D., M.P.H., F.A.C.S. "Obesity crisis in America". United States
        Department of Health and Human Services. January 8, 2007. U.S. Department of
        Health&HumanServices.1Dec.2007[ww.surgeongeneral.gov/news/testimony/obe
        ity07162003.htm].

        This is a statement given by the surgeon general of the US public Health Service about
the issue of obesity in the nation. The source provided a detailed personal perpespective on this
crisis of obesity. Carmona makes many propositions and generalizations, but bases them on
facts. He mentions solutions to the problem and also advocates an attempt to end the ongoing
trend of obese children. The source was important because it was stated to multiple people and
therefore it in itself made the issue of obesity known to an audience. Carmona plans to attend
schools and start programs to stop this crisis. The numbers in this source were supported by other
sources of information found and the conclusions made based on them were conducive.

Gabriel, Trip. "Big Mac's Price cut Won't Cut Fat". Health. March 5th, 1997. New York Times.
        15 Dec
        2007.[http://query.nytimes.com/gst/fullpage.html?sec=health&res=9C04E3DF1430F96A
        35750C0A961958260].

        This article presents many figures about a well known fast food chain, Mc Donalds. The
amount of calories in commonly ordered food items were calculated and then these numbers
were commented on by noted professionals in the nutrition field. There was also a mention of the
price decrease and expansion in the number of restaurants. Correlations were drawn between the
amount of calories in a typical fast food meal and the number of overweight Americans. The
source showed how articles on this topic are published often, it is just up to readers to take the
information seriously.

"Healthy Heart-Avoid trans- fat". NYC Health. 2007. The New York City Department of Health
        and Mental hygiene. 1 Sept. 2007
        [www.nyc.gov/html/doh/html/cardio/cardiotransfat.shtml+foods+that+took+out+
        rans+fat&h].

        This website correlated to the NY Times article on fast food restaurant calories. It was in
response to the amount of fat in these products. The source is creditable because it is directly
from the NYC Department of Health and Mental Hygiene. The department passed an amendment
of the Health code to phase out artificial trans fat in all NYC restaurants and other food services.

This source showed an effort by the city to cut back the calories in commonly eaten places by Americans. It was a nice juxtaposition to the artery clogging NYTimes calorie counter article.

He's fit. August 28, 2007. TFS Media Network. 26 Nov. 2007
[http://www.hesfit.com/men/comment/desk-jobs-obesity-and-back-pain/].

This source was published by The American Journal of Preventive Medicine. It provided information about men and their job settings. The paper proved by means of a study that the more hours spent behind a desk the more likely the person is to be obese.

Koshuta, John "Junk Food Ads, Fast Food Increasing Teen Obesity" News Target.
October09, 2009. News Target Network. 27 Nov. 2007
[www.newstarget.com/022105.html].
This article proposed a link between television commercials and obesity. It references the American Journal of Preventive medicine and how their research showed the junk food commercials many be one of the reasons for a rise in the number of obese teenagers. Also it includes results from a University of Illinois Chicago and University of Michigan study whose results showed that 26% of TV ads seen by teens were for food products.

Leslie, Mitch. "For kids, reducing TV viewing may be a key to preventing obesity".
Stanford Online Report. May 5' 1999. Stanford University. 1 Sept. 2009
[www.stanford.edu/dept/news/report/news/may5/tvweight-55.html].
This site had a news report about a study performed at an elementary school. Robinson did a study about grade school children and how watching less hours of television could be the key to lowering the numbers of obese children. It was a creditable study that he presented at the Pediatric Academic Societies Annual meeting in San Francisco. This study was useful because it was similar to the thesis topic but for a specific age group.

Nation at Risk: Obesity in the United States. The Robert Wood Johnson Foundation
American Heart Association
[http://www.americanheart.org/downloadable/heart/1114880987205NationAtRisk
This file was very useful because it was encompassing of all aspects of obesity. It gave statistics about the number of hours television is commonly watched and how technology may be a cause of obesity. It also is from a very known source and noteworthy foundation. It included disparities, causes of obesity, health consequences, and financial consequences.

Fujiki, Yuichi et al. NEAT-o-Games: blending physical activity and fun in the daily
routine.2008[http://portal.acm.org/]
This was an article about a game that tries to encourage physical activity. It is shown to play a major role in obesity prevention and intervention. This was only a pilot experiment, but the results are promising. The paper gives details about the game and how it will modify a child's behavior. This was another reference to the steps towards preventing obesity, but it also includes technology, which can be used as a positive for technical advances.

Nintendo Annual Report. 2004. Nintendo Inc. 1 Sept. 2009
[http://www.nintendo.com/corp/report/fiscal2004.pdf].

This was Nintendo's repost for the year of 2004. It included a very useful timeline of when their products came out. It ranged from 1902-2003. Also it included prospective new products. This was used to coincide the years of new technology with obesity trends.

Obesity in America. The Endocrine Society and The Hormone Foundation. 27 Nov. 2007
        [http://www.obesityinamerica.org/index.html].
        This site provided many recent studies, statistics, and success stories about obesity, There are constant updates about Obesity in america and also background information. The site also provided needed information about basic obesity information. The site was an overall summary of obesity and had many tabs with different aspects of it.

Obesity in the United States. Wikipedia. Oct 16th 2009.
        [http://en.wikipedia.org/wiki/Obesity_in_the_United_States]
        This site is allowed to be edited by people and has a general overview of statistics per state. The site was useful for finding other sources in its "reference" portion. The information is not always reliable, but can be checked by going directly to the source it came from.

"Obesity in US adults 2007". The Obesity Society. 2009   [http://www.obesity.org/statistics/].
        This site provided useful statistics for the year of 2007. It included a map of the US and the obesity rates for each state. It was similar to the obesity in America site and the data coincided. There was more data on the trends of obesity compared to other sites. There was a comparison of 1985, 1993, and 2000. Also this link provided other sources of information which were also cited.

Otto, Mary " Soda Ban Means Change at Schools" The Washington Post May 2006
        [http://www.washingtonpost.com/wpdyn/content/article/2006/05/03/AR2006050
        02399_pf.html]
        This article spoke about how three years ago the beverage industry announced it will remove high calorie sodas from all schools. This was due to Bill Clinton's anti-obesity groups. It was interesting to see how the restrictions on drinks differed between middle schools and high schools. The article was one of the many examples of how childhood obesity is trying to be prevented.

Polycystic Ovarian Syndrome Association, Inc. 4 Sept. 2000
        [http://www.pcosupport.org/medical/whatis.php].
        This source was used a quick reference for what PCOS was. It showed the obesity was a common cause of it. Information was needed on how serious this syndrome was and what it affected. This site provided the needed information to understand this effect of obesity.

Stobbe, Mike. "Government: Obesity Rates Leveled". Associated Press. November 28th, 2007. The Associated Press. 1 Sept. 2009   [http://ap.google.com/article/ALeqM5i2sWnaYFg9Axo].
        This article gave data about obesity rates in the US and how they have fluctuated through the years. It quoted many CDC results. It included the 2003-2004 survey report.

Syndrome." ScienceDaily 18 June 2007. 23 October 2009
        <http//:www.sciencedaily.com/releases/2007/06/070614113310.htm+obesity+in
        college+students&cd=1&hl= n&ct= nk&gl=us#>.
        This article had useful data about undergraduates and obesity. This site will be very
useful in the comparison of the thesis data to what has already been collected. The study was
done in the University of New Hampshire, but it also compares it to national data.

"Trends of obesity and underweight in older children and adolescents". Nutrition
        ResearchNewsletter. FindArticles.com. 23 Oct, 2009.
        [http://findarticles.com/p/articles/mi_m0887/is_7_21/ai_90216451/]
        This source was information about poverty nations. It was useful in showing that other
nations are experiencing similar trends in obesity. It mentioned Brazil and China. The source
made a correlation between technology and obesity trends.

US Department of Health and Human Services. Healthy People 2010 (conference ed, in 2 vols).
Washington DC: US Department of Health and Human Services; 2000
        [http://www.health.gov/healthypeople.]
        This site was on how to get in shape and stay healthy. It was useful as one of the many
options that are available to obese people. It is a 2010 challenge that individuals, communities,
and professionals participate in to get in shape and take care of themselves. There was a link to
physical activity guidelines for Americans that gave samples of types and amounts of physical
activities that offer substantial health benefits.

"US obesity Tends 1985- 2006" CDC.gov. July 27th, 2007. Centers for Disease Control   and
Prevention. 27 Nov. 2009
        [www.cdc.gov/nccdphp/dnpa/obesity/trend/maps/+percentage+of+US+obesity+I
        +2006].
        The Center for Disease Control and Prevention was referenced in the Associated Press
article so further research showed that this site provided valuable statistical information about
Americans and obesity. It broke it down to childhood obesity, obesity and genetics, and obesity
and overweight. This site provided credible health information.

Survey

Age:

Current Weight (lbs)

Current height(feet/inches)

Weight as an incoming freshman(lbs)

Height as an incoming freshman(feet/inches)

Number of hrs spent watching television per day

 Number of hrs spent playing video games per day

Number of hrs spent on the computer per day

Number of hrs spent performing aerobic activities (walking, jogging any activity that uses large

muscle groups, can be maintained continuously, and is rhythmic in nature)

Number of hrs spent playing a sport/intense work out

A typical breakfast

A typical lunch

A typical dinner

Number of times a week you eat at a fast food chain

Number of times a week you eat a home-made meal