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A Study on Technological Recreation and BMI among Children

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ABSTRACT

The present research is to study the relationship between the conventions of technological recreation and the body mass index (BMI) among children. Now a days children are more inclined to media and technological amenities and they consume multiple types of technological recreations and spend additional times in front of computers, television and game screens than any other activity in their lives except relaxing. Over the last several decades the prevalence of obesity and other health issues has grown at an alarming rate and is reaching epidemic proportions. Increase in weight has been associated with rises in a host of other chronic conditions. There is growing evidence that television viewing and technology is a major contributor. The objective of the study was to study the relationship between no of hours spent on use of technology and BMI among children. For this above study a sample of 199 students was selected from different age range of 10-12 years who belonged to the middle socio economic strata. The number of hours spent on technology was assessed on the basis of the questionnaire on technology recreation and body mass index was measured by calculated height and weight. A Pearson product moment correlation coefficient was conducted and the results concluded that number of hours spent on technological recreation and body mass index did not correlate significantly as obtained correlation value was .110 with the significant level of .061.

Keywords: Use of Technology, Body Mass Index, Chronic Conditions

INTRODUCTION

Overview

People who are overweight may suffer from diseases like cardiovascular disease, type 2 diabetes and some cancers. While the causes are multi-faceted, there is growing evidence that media is a major contributor. There are many issues faced by people concerning their body weight and people are under tremendous pressure to fit a certain mould. Many people want to be slim, since slim is regarded as healthy. It differs from person to person and it has been associated with both underweight and overweight men , women and children (Kakizaki et al, 2007). Fassino et al (2002) has described overweight people or children are more impulsive due to their extreme exposure towards the media.

Concept

Technology

It can be defined as the branch of knowledge that deals with the creation and use of technical means and their interrelation with life ,society and the environment, drawing up on such subjects as industrial arts, engineering, applied science and pure science.

Types of technology

Definition of television:

A system for transmitting visual images and sound that are reproduced on screens, chiefly used to broadcast programs for entertainment.

a) The transmission of dynamic or sometimes static images, generally with accompanying sound, via electric or electromagnetic signals.

Body mass index

A key index for relating weight to height.. BMI is a person's weight in kilograms (kg) divided by his or her height in meters squared. The national institutes of health (NIH) now define normal

weight, overweight, and obesity. According to BMI rather than the traditional height and weight charts. Overweight is a BMI of 27.3 or more for women and 27.8 or more for men. Obesity is a BMI of 30 or more for either sex (about 30 pounds overweight). A very muscular person might have a high BMI without health risks.

Present Study

The present study addresses the relationship between hours spent on technological recreation and children's BMI.

Statement of the problem

To study the relationship between hours spent on technological recreation and children's BMI.

Significance of the study

Having always been considered overweight or fat and also growing up having had too exposure to media and technological facilities, the researcher was interested to find out whether there existed a relationship between the two. Being overweight and excess exposure to media had prevented the researcher from leading a more fulfilling life. They have always been a barriers that the researcher has not been able to overcome and have affected every sphere of her life.

By identifying the relationship that may exist between media and BMI, it may help create more self-awareness. The results of the research would not only help her recognize her mental makeup, it may also provide answers regarding the issues that she has battled with constantly regarding her body weight and influence of media on that weight. It could shed light on whether the media had influenced her body weight.

The results may help the researcher understand whether the relationship exist between two or not.

Results of this research could have implications for children health education. With the lifestyle that people and children lead and constant exposure to the media and technology. There is indisputable evidence for the effects of obesity. Obese children are particularly susceptible to diabetes and diabetes in turn puts children at increased risk of cardiovascular disease. Overweight and obesity are associated with elevated mortality from all causes and the risk of death rises with increasing weight.

Objective of the study

To study the relationship between no of hours spent on technological recreation and children's BMI.

Literature Review

BMI and television viewing

Increased television viewing was related to increase BMI at 11 y in girls and at 23 y in both sexes. These associations were largely unaffected by potential confounders, suggesting that sedentary behavior is an important contributing factor to increasing fatness. With time trends suggesting that sedentary behaviors are increasing, a growing number of studies are now focusing on, or including measurements of sedentary behavior. Several cross-sectional studies in adults and children' demonstrate a relationship between longer hours of television viewing and increased fatness, and it is likely that since a large proportion of the population watch television on a daily basis, duration of viewing will show stronger relationships than frequency, which might explain our null relationship at 16 y. However, longitudinal studies report less consistent results.

BMI and physical activity and television viewing

In models investigating the simultaneous effects of physical activity and television viewing on BMI (i.e. adjusting each for the other) in 11-year-old girls, both television and physical activity were independent predictors of BMI, and the two variables themselves were unrelated. In female subjects at 23 y, the coefficient for physical activity was reduced, as was the coefficient for

television viewing but to a lesser extent. This suggests that part of the BMI–physical activity relationship is explained by the fact that the less active women at 23 y watched more television.

Methodology

VARIABLES, DEFINITIONS

i Independent variable

The independent variable of the study was the number of hours spent on technological recreation. The technological recreation was operationally defined by taking into consideration the number of hours children spent on watching and playing technological recreation.

ii Dependent variable

The dependent variable of the study was children's weight which was measured by the body mass index (BMI). it will be measured by dividing weight in kilograms by the square of height in meters of an individual.). It is calculated from the person's height and weight. A person with a body mass index of 25 kg/m2 will be clinically termed obese as opposed to 30 kg/m2 at the international level (Indian ministry of health, 2008).

Hypotheses

Based on the literature review the following hypothesis was formulated:

There will be positive correlation between the no of hours spent on use of technology and BMI among children.

Method

This section includes the sample description, tools used in the study, the procedure, experimental design and statistical analysis.

SAMPLE

The overall sample of the study consisted of 199 students from various English speaking schools of Pune city comprising of 100 boys and 99 girls from the age range of 10 to 12 years children. There socio economic status will be middle-class. The sample was randomly selected. The sample included students from Pune district of Maharashtra.

TOOLS

The following tools have been selected and used for the collection of required data.

Body mass index (BMI) Tools

BMI for children and teens, overweight is defined differently than it is for adults. Children are still growing, and boys and girls develop at different rates. So, BMI for children 2 to 20 years old is determined by using a BMI chart that compares their weight and height along with growing charts. The growth charts use a child's BMI, age, and sex to produce a BMI percentile.

A self-developed questionnaire with the help of previous references to measure no of hours spent on technology.

PROCEDURE

Convenience and purposive sampling method has been selected to draw the sample.

The study was conducted on 200 primary school children from various schools of pune city. Written permission was granted from the institution and with the co-operation of the principal of schools. Permission was sought. The investigator personally visited each school to collect duly filled tools and efforts were made to establish rapport with the subjects. Before administering the tests they were made clear about the purpose of collecting the data and were informed that the results of the test would be kept strictly confidential so that they can respond to the test items without any hesitation. The demographic details were collected ,their weight and height were measured, the questionnaire were distributed and

standardized instruction were given to the subjects and were told to give the first natural response that comes to mind. The data collected from the subject was scored as per the procedure of the test and was analyzed with the help of statistical analysis. The weight and height of the participants were used to determine their BMI by dividing their weight and height.

EXPERIMENTAL DESIGN

The following experimental design was used to study the relationship between no of hours spent on technological recreation and BMI among children.

R X Y

R is the random selection of the subjects for the sample

X No of hours spent on technological recreation

Y BMI

STATISTICAL ANALYSIS

To determine the relationship between hours spent on technological recreation and BMI among children, the Pearson's product moment correlation coefficient was used.

Results and Discussion

Results

Descriptive statistics including the mean, standard deviation were used for analyzing the data. Further the data was analyzed using the Pearson's correlation coefficient

Since it is a correlation study the relationship were tested in this study were the number of hours spent on technological recreation and body mass index(BMI) among children. For studying the relationship between the variables the Pearson's product moment correlation coefficient was used.

Table 1

Descriptive statistics of sample

Descriptive Statistics

	Mean	Std. Deviation	N
TR	8.5500	1.48949	199
BMI	18.2618	4.65986	199

Table 1 shows the mean, standard deviation of the two variables under study-the number of hours spent on technological recreation and body mass index among children. The mean and standard deviation for technological recreation were 8.5 and 1.4 respectively. The mean and the standard deviation for BMI were 18.26 and 4.65 respectively.

Table 2 pearsons coefficient of correlation for number of hours spent on technological recreation and BMI among children

Correlations

		TR	BMI
TR	Pearson Correlation	1	.110
	Sig. (1-tailed)		.061
	N	199	199
BMI	Pearson Correlation	.110	1
	Sig. (1-tailed)	.061	
	N	199	199

The Table 2 shows the obtained correlation is .110 showing the significance level of .061 between the number of hours spent on technological recreation and BMI

Discussion

The present study aimed at studying the relationship between Technological recreation and BMI among children. The sample consisted of one ninety nine participants between the ages of 10-12 years from Pune city. The results of the study did not support the proposed hypothesis.

The hypothesis stating that there will be significantly positive correlation between the no of hours spent on technological recreation and BMI among children was rejected because the obtained correlation value was .110 with the significance level of .061

The respective studies found for the explanation for the rejected hypothesis was To investigate relationships between children's body mass index (BMI) and parent reports of children's television and video game/computer habits, controlling for other potential risk factors for pediatric obesity.

Conclusion, suggestions, implications, limitations

Conclusions

The present study has contributed to the knowledge of the relationship between the number of hours spent on technological recreation and body mass index. From the analyzed data,it was found that one hypothesis have been formulated have not been accepted.

Implications of the study

The findings of the research have shown that no of hours spent on technological recreation and body mass index among children do not correlate which suggests that there are other major factors (like biological factors hormonal changes, hereditary factors, weight of a parent)that could play a more important role in determining BMI than number of hours spent on technological recreation.

To solve the problem of overweight and obesity, Technological recreation is beyond the capacity of a single profession. A successful strategy would be to educate children to develop

skills for behavioral change, building a positive self-image, addressing social difficulties. Education on healthy weight, healthy growth and development is also important.

Limitations of the study

- The first limitation of the present study was the small sample size.
- Another limitation is that a majority of the sample were students and children.
- Also the participants were from middle class families. This means that the population is more representative of students and children from the middle class strata, thus limiting the generalisablity of the results.
- The questionnaire utilized to assess the participants was self-report questionnaire and this could have also affected the results. The participants could have answered the questionnaire with social desirability in mind and this would not be a true reflection of their actual behavior.
- The data is collected only from schools; it limits the generalizability of the results.
- The data is collected only from Pune city, so the results cannot be generalized.
- The data is collected only from the age range of 10-12 years, so the results cannot be generalized to the other age ranges.
- All the students will not have all the technological amenities (like i-pads, laptopsetc.) that will affect the results.
- The medical establishment has generally acknowledged some shortcomings of BMI.

Suggestions for future research

There were several limitations in the present study that could be addressed in future research. Firstly, the study could benefit from replication with a larger sample. It may also be beneficial to include participants from other socio-economic strata to examine whether there could be differences on the relationship between variables. This could also have an advantage of generalizing the results to other socio -economic classes.

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