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A relationship among leisure activities and B.M.I of school students

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Abstract

Introduction: In this research, a very significant facet of everyday life-namely, leisure activities has been given attention in relation to BMI. The correlation between engaging in leisure activities and body mass index was investigated.

Method: For the purpose of this research, one hundred fifty students from a school based in Chandigarh, also known as the city beautiful, were chosen as subjects. Their height and weight were measured to determine their body mass index (BMI), and the Godin Leisure-Time Exercise Questionnaire (1985) was used to collect data for leisure activity and to determine the level of physical activity done in leisure activity.

Results: The end result demonstrated a statistically significant link, with r being -0.286 and P being more than 0.05 . The finding was statistically significant, although the association was less than expected given that the value was so low.

Conclusions: Finally, we may draw the conclusion that the value of one variable rises in tandem with an increase in the value of a second variable; hence, engaging in recreational activities is necessary to work toward the goal of improving one's health.

Keywords: Leisure activity, BMI, health

Introduction

Free time, or leisure, is time that is not devoted to errands, chores, or other productive activities. It also includes the times before and after necessities like eating, sleeping, and (in certain places) attending school. People often blur the lines between work and play, doing job-related things for both short- and long-term satisfaction. The terms "free time" and "leisure time" might be thought of as separate concepts. For instance, the expert argues that leisure time is a commodity that is taken from individuals and sold back to them as a product called "leisure." The academic field known as "leisure studies" investigates and analyses leisure activities. Young people nowadays choose passive forms of leisure like social networking sites, video games, and television over more strenuous pursuits like sports and other outdoor activities. Young people's participation in these kinds of activities during their free time is causing a wide range of health issues. Around 6% of all fatalities worldwide may be attributed to a lack of physical exercise, making it the fourth highest risk factor for global mortality (WHO 2010b) [26]. Compared to sedentary individuals, physically active men and women had decreased risks of all-cause mortality, cardiovascular disease, high blood pressure, stroke, diabetes, metabolic syndrome, colon cancer, breast cancer, and depression, according to several observational studies (Physical Activity Guidelines Advisory Committee 2008). Adults should engage in at least 150 minutes of moderate or 75 minutes of strenuous aerobic physical activity each week, in addition to muscular strength training twice weekly, to reap the health benefits of these activities (WHO 2010b) [26]. But most people aren't active enough; in 2006, for example, 40% of Americans didn't exercise at all during their free time (Physical Activity Guidelines Advisory Committee, 2008). In Finland in 2009, less than 50% of the population met the current recommendation of 150 minutes of moderate physical activity weekly, and only slightly more than 10% when the additional two strength training sessions weekly were included (Helakorpi *et al.*, 2010) [15].

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Health and fitness in India

The majority of Indians (78%) aren't getting enough of the fruits and vegetables they need, and just 29% are getting enough exercise. In West Bengal, 90% of respondents don't eat enough fruits and vegetables and 33% don't move about enough. Sixty percent of those polled in India report eating too little fruits and vegetables. Households in the lower income quintiles and the elderly have a larger percentage of respondents who eat inadequate amounts of fruits and vegetables compared to those in the higher income quintiles and the general public. It has been shown that both respondent age and family income quintile are associated with an increase in the percentage of people who do not get enough exercise. Comparatively, 39% of urban respondents and 27% of rural respondents do not get enough exercise. Sixty-plus percent of respondents don't get enough exercise, and ninety percent don't eat enough fruits and vegetables. Measurements of height and weight were taken from those respondents who were able to provide them. Women in the population with recorded height and weight average 151 centimetres, whereas men average 162 centimetres. The average height of the responders is below average in both sexes, at 19% for women and 13% for men. In Assam, 34% of women and in West Bengal, 26% of women are under average height. A quarter of men and a third of women say they weigh less than the ideal body mass index of 18.5 kg/m². There are around 10% of men and 13% of women whose body mass index is more than 30.0 kg/m². In general, the standard mean height and weight are lower among females than men, rural residents than city dwellers, and the lowest income quintile as opposed to the highest and illiterate respondents as compared to the educated. This data comes from the 2003 World Health Survey in India.

Sporting Events

Work, chores around the house and yard, travelling to and from destinations, gardening, and fitness and sports are all examples of physical activities. Ischemic heart disease, stroke, diabetes type 2, breast cancer, and colon cancer are all significantly lowered by regular exercise. Increasing insulin sensitivity, elevating HDL cholesterol levels, and decreasing blood pressure are just a few of the many health benefits associated with regular physical exercise. Physical exercise for fun also aids in the management of mild cases of stress, depression, and obesity. The World Health Survey only takes into account high-intensity activities performed in the week before to the survey. The majority of Indians (71%) are not getting enough exercise, according to a recent survey. As a percentage of the population, West Bengal ranks higher than Rajasthan (33% vs. 30%) for insufficient levels of physical activity. Twenty percent of respondents in Assam had Common frameworks for describing the effects of exercise include: Its Regularity in Occurrence (sessions per week), The Time Element (minutes per week).

Strenuousness (amount of energy expended)

Considering the circumstances under which the action is done (leisure time, job-related, house work-house maintenance-caring for family, and transport). To get the health benefits of exercise, it must be performed at a certain level of intensity for a certain amount of time (Capersen *et al.*, 1985, Egger *et al.*, 1999, Bouchard 2001) [16, 17, 18]. Less clear is the dose-response link between exercise and health, particularly with respect to specific illnesses and overall physical activity across all domains (leisure time, work-related, home

insufficient levels of physical activity. Only 24% of men and 34% of women, respectively, feel like they get enough exercise. 39% of urban respondents and 27% of rural respondents meet the criteria for insufficient physical exercise. As expected, a higher percentage of older respondents and those in the highest income quintile also report inadequate levels of physical exercise. (The State of the World's Health Report 2003: India) Physical activities of a moderate intensity are those that require some effort but only cause you to breathe somewhat more rapidly than usual. Activities such as doubles tennis, biking, and carrying light weights all fall within this category. Since walking is already evaluated in a separate item, it is not included in the moderate activity inquiry. Energy expenditures of 3 to 6 METs are considered to be for activities of a moderate intensity. (The State of Health in the World 2003: India)

Participating in regular physical exercise has many positive effects on one's health

The data requirement on the prevalence of physical activity and the identification of those whose health is at risk owing to inactivity should be based on the epidemiological evidence for the dosage of physical activity considered to give a health benefit. Many diseases and injuries may be avoided or treated more effectively with regular physical exercise, and this fact is now widely accepted (Blair *et al.*, 1996, Lee & Paffenbarger 1997, Villeneuve *et al.*, 1998) [22, 23, 24].

Dose-response relationship

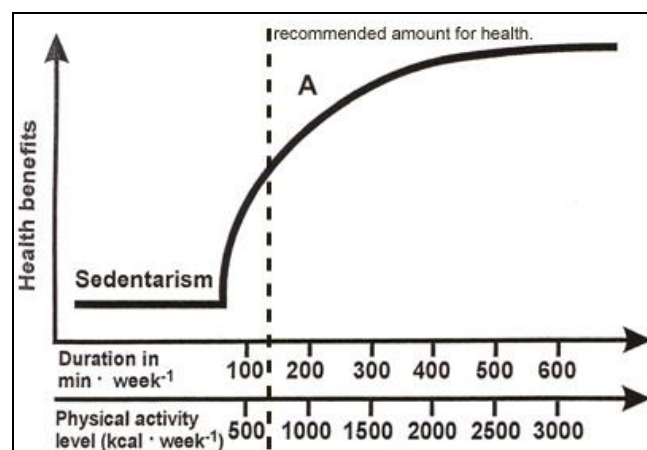


Fig 1: Schematic illustration depicting the relationship between physical activity levels defined in minutes of participation per week or energy expenditure, resulting from a dose response symposium, 2001 with Australian Physical Activity Guidelines for Adults threshold for health added (Bouchard, 2001) [18]

work/maintenance/caring for family/transportation). A recent consensus paper resulting from a symposium on the dose response relationship between physical activity and health concluded that the relationship is most likely curvilinear, with the greatest health improvement occurring when a person goes from being sedentary (less than 100 minutes of leisure time physical activity per week) or when they go from participating in light physical activity (1-2.9 METS) to undertaking moderate intensity physical activity (3-5.9 METS) (Bouchard 2001) [18]. Adding more exercise to your routine has extra health advantages (Bouchard 2001) [18]. Figure 1 shows this correlation. Most exercise-related injuries happen in highly competitive sports or when previously inactive people suddenly engage in very strenuous exercise

(Powell *et al.*, 1998) [4].

A variety of physical activities engaged in for fun and relaxation

The reasons why activities like those performed at work or around the home do not count toward the sufficient amount of physical exercise needed for good health are that: To a greater extent than with other types of activities and health, the dose-response link between physical exercise and health during leisure time is well documented (Egger *et al.*, 1999) [17]. Despite the fact that physical activity performed outside of leisure time affects both total energy expenditure and health outcomes, the dose-response connection and the threshold for adequate non-leisure time physical activity for general health remain elusive. Thus, the cutoff for adequate leisure-time physical activity for general health serves as a proxy measure for the association between physical activity and health status, a benchmark for identifying persons whose health is at risk owing to inactivity, and a health promotion message. The majority of jobs in industrialized nations are sedentary, making leisure time the best time to increase physical exercise (Morris & Crawford 1987, Montoye *et al.*, 1996, Egger *et al.*, 1999) [17, 5, 19]. Depending on criteria such as employment schedule, home duty allocation, commute length, number of dependents, and desire for independence, the average person enjoys between three and four hours of free time every day (Hanke *et al.*, 1979) [20]. (Hanke *et al.*, 1979) [20]. the validity of questions about physical activity at work, in the garden, or around the house is low, whereas the validity of questions about physical activity during leisure time is high (Ainsworth *et al.*, 2000) [21]. Constitutional psychology is a hypothesis that links physical characteristics to underlying personality traits; it was established by American psychologist WA Siam Herbert Sheldon in the 1940s. Using just a person's weight and height, the body mass index (BMI) may be used as a rough estimate of their body fat percentage. The body mass index (BMI) is not a reliable indicator of fat distribution. It was developed by Belgian polymath Adolphe Quetelet between 1830 and 1850 as part of his work on "social physics." To calculate a person's body mass index, we divide their total body fat by the square of their height. The standard medical equations provide a measurement of kg/m² as their unit. The body mass index (BMI) may also be calculated with the use of a BMI chart, which plots the index against the subject's weight (on the horizontal axis) and height (on the vertical axis), with various values represented by different colors or contour lines. Cheung Sin Tung (1981) [3], for example, researched the reasons why some students are able to continue regular involvement in LTPA while others fail to do so, and he determined the views of Hong Kong secondary school students who have a habit of using the internet. This research analyzed the positive and negative outcome beliefs, normative beliefs, and constraints of secondary school students who use the internet and engage in LTPAs. These results are the result of a qualitative research strategy including semi-structured interviews. Eight Hong Kong secondary school pupils with regular internet usage were selected for the study. They shared their thoughts and feelings regarding their leisure activities and answered the researchers' questions. Excel was used for the analysis of data, and the constant comparison method (Glaser and Strauss, 1987) was used. The findings revealed a mixed bag of student sentiments towards LTPA involvement. To determine if LTPA protects against mortality, type 2 diabetes, and other chronic illnesses, and

against increases in weight and waist circumference, Waller and Katja (2011) [25] undertook a research that accounted for hereditary variables and early life circumstances. All of the people included are members of the massive Finnish Twin Cohort, which consisted of 12,069 twins in 1975. Twenty-four hundred and eighty-seven people were chosen, all of whom were diabetes-free and for whose LTPA and BMI data were available in 1975, in order to examine the prevalence of type 2 diabetes (T2D). Those people were categorised into five groups called quintiles based on their LTPA MET index. From January 1, 1976, through December 31, 2004, the possibility of developing type 2 diabetes was evaluated. The long-term discordance analysis found that out of 5663 sets of healthy adult twins, 146 showed no agreement on the amount and degree of LTPA between 1975 and 1981. Between January 1, 1983, and December 31, 2004, we analysed deaths. For the 2005 follow-up, 95 sets of twins (76 DZ, 19 MZ) were still around (mean age 58.5y, range 48-78). Questions on self-reported weight, waist size, and the presence of chronic diseases were among those asked in depth throughout the interview. A variety of paired tests (Mc Nemars test, t-test, conditional logistic regression, and the Cox proportional hazard model) were utilised in the statistical studies. The BMI-adjusted hazard ratio for physically active (BMI quintiles II-V) compared to sedentary (BMI quintile I) co-twins at follow-up was 0.54 (95% CI 0.37-0.78), according to studies of the whole 1975 cohort including matched cases and controls for type 2 diabetes. By the end of 2004, 24 conjoined twins (16 inactive and 8 active) had passed away among the 146 LTPA discordant couples. The social class-adjusted HR for the physically active twins was 0.39 (95% CI 0.18-0.85) suggesting that they had a lower chance of dying from any cause. Among the few MZ couples, this was not seen. Active co-twins had a decreased chance of developing type 2 diabetes or glucose intolerance (OR=0.09, p=0.022) and incident high blood pressure (OR=0.46, p=0.039), compared to the inactive co-twins. At the follow-up, the active twins' happiness was higher than that of their less active counterparts (p=0.047). By contrast, the physically-active pair had a higher risk of injury due to sports (OR=1.9, p=0.051). Within the sample of 42 pairs discordant for LTPA across 30 years, the active twins had a reduced mean weight increase from 1975 through 2005 (95% CI 2.0-8.9, p=0.003) and a smaller mean waist circumference (8.4 cm, 95% CI 4.0-12.7 cm, p0.001) than their sedentary co-twins. Regular exercise is important for health maintenance because it slows the pace at which fat is being stored, reduces the size of the waistline, and lessens the likelihood of developing type 2 diabetes. Some of the relationships between mortality, illness incidence, and physical activity were more evident in dizygotic than monozygotic twin pairs discordant for LTPA, suggesting that genetic factors may play a role in explaining these connections.

Method and Procedure

To further ascertain the benefits of leisure activities for improved health, the present research was a survey study and was undertaken to establish the association between leisure activity and body mass index among the school students of Chandigarh, the lovely city.

Subject Selection

Students from private schools in the lovely city of Chandigarh, India, were chosen at random to participate in this research.

We used the Godin Leisure-Time Exercise Questionnaire (1985) to assess the participants' levels of recreational exercise. Also, the participants' body mass indexes were determined by analysing their height and weight data. Data was gathered by having participants fill out a questionnaire and measuring their height and weight. The information was gathered with the help of the relevant instructors during school hours. The Pearson product moment coefficient of correlation was used to analyze the relationship between levels of leisure time activity and body mass index.

Results

The results of the data are presented in table – 1 and table – 2.

Table 1: Summary of data

	Leisure Activity	BMI
N	150	150
Mean	83.07	21.41
Variance	310.53	15.64
Std. Dev.	17.62	3.95
Std. Err.	1.44	0.32

Table 2: Coefficient of Correlation and t value

R	R ²	T	Df	P
0.186	0.0349	2.31	148	0.011

The results shown in table 2 presents that there is a positive correlation between leisure activity and BMI of students with the $r=0.186$, but the relation is not very strong as the value is very less, still there is significant relation between the two variables as with $p<0.05$. The value of one variable increases with increase in the value of second variable. The results revealed that the students who were involved in leisure physical activities had normal BMI. In this study the average scores of both the variables prove this that both variables are significantly related to each other. It was found that the students who were not involved in leisure activities had higher BMI the normal.

Conclusion

The current research illustrates the link among physical activity and BMI. The pupils who practice physical activities during leisure time have improved BMI. There was substantial association among the variables considered for this research; in today's lifestyle it is extremely vital to include the young in physical activities during their free time. Leisure time and physical activities are the best connected for improved health. More and more youth is being interested in non - physical leisure activities and it is contributing to the ill health of young. In the World Health Survey 2003 it was revealed that 29 percent Indians don't perform appropriate physical exercise which is concerning. In today's circumstances the need of the hour is more and more facilities to include the young in leisure time physical activities. For which green places must be established for the young where they may spend their spare time conducting physical activities. Most essential is to educate the school instructors to teach the kids how they might use their free time for better health. Leisure time physical exercise camps must be arranged by the institutions to drive larger involvement of youngsters in physical leisure activities, and we must promote the active lifestyle. With respect to the relationship between the amount of time spent playing videogames and other leisure activities, we found that children who spent more time playing videogames also spent more time watching television,

reading newspapers, reading comics, playing non-organized sports, playing indoors, and working on the computer. The substantial association found in our study between playing videogames and watching television connects up with findings of prior research by Selnow (1984) [14], therefore significance must be given to physical activities whilst spending leisure time.

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