



## A RELATIONSHIP AMONG LEISURE ACTIVITIES AND B.M.I.OF ROHTAK CITY SCHOOL STUDENTS

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### Abstract

In this study a very important aspect of life, leisure activity was concerned with the BMI. The relationship was tested between leisure activity and BMI. For this study 150 students of a Rohtak based schools were selected as subjects and their heights and weights were measured to calculate their BMI and Godin Leisure-Time Exercise Questionnaire (1985) was used to collect data for Leisure activity and to measure the level of physical activity done in leisure time. The result had shown significant relationship with  $r = 0.186$ , and  $P < 0.05$ . the result was significant but correlation was not so strong as the value was very less. Finally it can be concluded that both the value of one variable increases with increase in the value of second variable, so leisure activity must be performed in order to attain better health.

**Key Words:- Leisure activity, BMI, Health.**

### Introduction

Leisure, or free time, is time spent away from business, work, and domestic work. It is also the periods of time before or after necessary activities such as eating, sleeping and, where it is compulsory, education. The distinction between leisure and unavoidable activities is loosely applied, i.e. people sometimes do work-oriented tasks for pleasure as well as for long-term utility. A distinction may also be drawn between free time and leisure. For example, Situations International maintains that free time is illusory and rarely free; economic and social forces appropriate free time from the individual and sell it back to them as the commodity known as "leisure". Leisure studies are the academic discipline concerned with the study and analysis of leisure.

In today's world the youth is getting away from the physical activity, now a days the youth is interested in social networking sites and other comfortable entertainment ways like play stations, movies and television. Youth is involved in such activities during their leisure time which are leading them to many health related problems. Physical inactivity has been identified as the fourth leading risk factor for global mortality and the cause of approximately 6% of deaths globally (WHO 2010b). Abundant evidence from observational studies shows that active men and women have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon cancer, breast cancer, and depression compared to less active people (Physical Activity Guidelines Advisory Committee 2008). In order to improve health, adults should do at least 150 minutes of moderate or 75 min of vigorous aerobic physical activity per week and in addition, muscle strength training twice a week (WHO 2010b). However, most people are insufficiently active, for example about 40% of Americans engaged in no leisure-time physical activity in 2006 (Physical Activity Guidelines Advisory Committee 2008), while in Finland in 2009, under 50% of the population met the current recommendation of 150 minutes of moderate physical activity weekly, and only just over 10% when the additional two strength training sessions weekly were included (Helakorpi et al. 2010).

Constitutional psychology is a theory, developed in the 1940s by American psychologist WASiam Herbert Sheldon, associating body types with human temperament types. The body mass index (BMI), or Quetelet index, is a heuristic proxy for human body fat based on an individual's weight and height. BMI does not actually measure the percentage of body fat. It was devised between 1830 and 1850 by the Belgian polymath Adolphe Quetelet during the course of developing "social physics". Body mass index is defined as the individual's body mass divided by the square of his or her height. The formulae universally used in medicine produce a unit of measure of kg/m<sup>2</sup>. BMI can also be determined using a BMI chart, which displays BMI as a function of weight (horizontal axis) and height (vertical axis) using contour lines for different values of BMI or colors for different BMI categories.

$$\text{BMI} = \frac{\text{mass(kg)}}{(\text{height(m)})^2}$$

There are other researchers who had worked in this area, *Cheung Sin Tung (2008)* conducted a study to determine the attitudes of secondary school students who have an internet-use habit in Hong Kong towards LTPA participation, and examined the reason why some students are able to maintain regular participation in leisure-time physical activity whereas others fail. This study investigated secondary students' positive and negative outcome belief, normative belief, and constraints towards internet-use and LTPA participation. Qualitative research method, which included semi-structured interviews, was



used for this study. The sample included 8 secondary students who have an internet-use habit in Hong Kong. They answered the questions from the investigators and expressed their own feeling about their leisure experiences. The data analysis was done by using the constant comparison technique (Glaser and Strauss, 1987) and typed in Excel. The result showed that there were both positive and negative attitudes of students towards LTPA participation. **Waller and Katja (2011)** conducted a study to find out if leisure-time physical activity (LTPA), adjusted for genetic factors and childhood environment, protects against mortality, type 2 diabetes and other chronic diseases and against increases in weight and waist circumference. All participants were selected from the large Finnish Twin Cohort, which included 12 069 twin pairs in 1975. To investigate the occurrence of type 2 diabetes (T2D), 20 487 individuals were selected who were free of diabetes and had data on LTPA and BMI in 1975. These individuals were divided into quintiles according to their LTPA MET index. T2D risk was assessed between 1.1.1976 and 31.12.2004. For the long-term discordance analyses, 146 from 5663 healthy adult twin pairs were identified as discordant for both intensity and volume of LTPA in 1975 and 1981. Mortality analyses were carried out between 1.1.1983 and 31.12.2004. Among the 146 pairs, 95 sets of twin pairs (76 DZ, 19 MZ) were alive and participated in a follow-up telephone interview in 2005 (mean age 58.5y, range 48-78). The interview included detailed questions on the continuation of LTPA, self-measured weight and waist circumference and occurrence of chronic disease. Paired tests (McNemar's test, t-test, conditional logistic regression, Cox proportional hazard model) were used in the statistical analyses. The paired type 2 diabetes analyses among the whole 1975 cohort showed that the BMI-adjusted hazard ratio for the active (quintiles II-V) compared to sedentary (quintile I) co-twins at follow-up was 0.54 (95% CI 0.37-0.78). Among the 146 LTPA discordant pairs, 24 co-twins (16 inactive and 8 active) had died by the end of 2004. The active co-twins had a reduced risk of all-cause mortality as social class-adjusted HR was 0.39 (95 % CI 0.18 – 0.85). This was not found among the small number of MZ pairs. Among the 95 interviewed pairs, the risk of type 2 diabetes or glucose intolerance (OR= 0.09, p=0.022) and incident elevated blood pressure (OR=0.46, p=0.039) was lower among the active co-twins. The active co-twins were more satisfied with their life at follow-up (p=0.047). In contrast, the active co-twins showed a tendency towards more sports-related injuries (OR=1.9, p=0.051). Within the subgroup of 42 pairs discordant for LTPA over 30 years, mean weight gain from 1975 through 2005 was 5.4 kg (95% CI 2.0-8.9, p=0.003) less and waist circumference 8.4 cm smaller (95% CI 4.0-12.7 cm, p<0.001) at follow-up among the active compared to inactive co-twins. Physical activity helps in maintaining overall health by decreasing the rate of weight gain, lowering waist circumference and reducing the risk for clinical T2D. However, genetic factors may play a role in explaining some of the associations between mortality, disease occurrence and physical activity, as some of the findings were clearer among the dizygotic than monozygotic twin pairs discordant for LTPA.

### Method and Procedure

The design of the study was multi group design and the nature of the present study was survey. To determine the relation among leisure activity and BMI, a sample of 150 subjects was used.

**Selection of Subjects:-** A sample of 150 subjects ranging between 12 to 16 years of age and students of private schools of Rohtak city was taken for the present study.

**Selection of Questionnaire:-** The **Godin Leisure-Time Exercise Questionnaire (1985)** was used for the purpose of measuring the score of leisure time activity of the subjects for the present study. And BMI was calculated by the height weight ratio of the subjects.

**Collection of data:-** The necessary data was collected by using the questionnaire and the height, weight of the subjects. The data was collected during the school timings with the coordination of the concerned school teachers.

**Statistical Procedure:-** The correlation between leisure activity and BMI scores was done by using Pearson product moment coefficient of **correlation**.

### Results

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

**Table – 1, Summary of data**

|                  | <b>Leisure Activity</b> | <b>BMI</b> |
|------------------|-------------------------|------------|
| <b>N</b>         | 150                     | 150        |
| <b>Mean</b>      | 83.07                   | 21.41      |
| <b>Variance</b>  | 310.53                  | 15.64      |
| <b>Std. Dev.</b> | 17.62                   | 3.95       |
| <b>Std. Err.</b> | 1.44                    | 0.32       |



**Table – 2, Coefficient of Correlation and t value**

| r     | r <sup>2</sup> | 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 the  $P < 0.05$ . The value of one variable increases with increase in the value of second variable.

The results show that the students who were involved in leisure physical activities had normal BMI. In this study the average scores of both the variables proved that both variables are significantly related to each other.

### Conclusion

The present study shows the relationship among physical activity and BMI. The students who perform physical activities during leisure time got better BMI. There was significant relation among the variables taken for this study, in today's lifestyle it is very important to involve the youth in physical activities during their leisure time.

### References

- Allison, M. T. 1988. "Breaking boundaries and barriers: future directions in cross-cultural research". *Leisure Sciences*. 10: 247-259.
- Backman, S. J. and Crompton, J. L. 1990. "Differentiating between active and passive discontinuers of two leisure activities". *Journal of Leisure Research*. 22.
- Bialeschki, M. D. and Henderson, K. A. 1988. "Constraints to trail use". *Journal of Park and Recreation Administration*. 6: 20-28.
- Burton, D. and Martens, R. 1986. "Pinned by their own goals: an exploratory investigation into why kids drop out of wrestling". *Journal of Sport Psychology*. 8: 183-197.
- Barnett, L. A. and Kane, M. J. 1985. "Individual constraints on children's play". In Wade, M. G. (ed.). *Constraints on Leisure*. Springfield, Illinois: Charles C. Thomas, pp. 189-226.
- Boothby, J.; Tungatt, M. F.; and Townsend, A. R. 1981. "Ceasing participation in sports activity: reported reasons and their implications". *Journal of Leisure Research*. 13: 1-14.
- Crawford, D. W. and Godbey, G. 1987. "Reconceptualising barriers to family leisure". *Leisure Sciences*. 9: 119-127.
- Francken, D. A. and van Raij, M. F. 1981. "Satisfaction with leisure time activities". *Journal of Leisure Research*. 13: 337-352.
- Godbey, G. 1985. "Non-participation in public leisure services: a model". *Journal of Park and Recreation Administration*. 3: 1-13.
- Gould, D.; Felts, D.; Horn, T.; and Weiss, M. 1981. "Reasons for attrition in competitive youth swimming". *Journal of Sport Behavior*. 5: 155-165.
- Henderson, K. A.; Stalnaker, D.; and Taylor, G. 1988. "The relationship between barriers to recreation and gender-role personality traits for women". *Journal of Leisure Research*. 20: 69-80.
- Howard, D. R. and Crompton, J. L. 1984. "Who are the consumers of public park and recreation services? An analysis of the users and non-users of three municipal leisure service organizations". *Journal of Park and Recreation Administration*. 2: 33-48.
- Jackson, E. L. and Dunn, E. 1988. "Integrating ceasing participation with other aspects of leisure behavior". *Journal of Leisure Research*. 20: 31-45.
- Jeannae M. Dergance et.al. (2003) "Leisure activities and adolescent antisocial behavior: The role of structure and social context" *Journal of Adolescence* 2000, 23, 113±127.
- Kelly, J. 1983. *Leisure Identities and Interactions*. London: George Allen and Unwin
- McGuire, F. A. 1984. "A factor analytic study of leisure constraints in advanced adulthood". *Leisure Sciences*. 6: 313-326.