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A correlational study on physical activity, energy expenditure and body weight among secondary school children in selected schools of Udupi district, Karnataka.

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ABSTRACT

A research study titled "A correlational study on physical activity, energy expenditure and body weight among secondary school children in selected schools of Udupi district, Karnataka" was conducted by Ms. Kalyani Biswas, as a partial fulfilment of the requirement for the degree of Master of Science in Nursing at Manipal College of Nursing, MAHE, Manipal.

The objectives of the study were to determine the physical activity and energy expenditure of secondary school children and to find the relationship between physical activity, body weight and energy expenditure among secondary school children. The conceptual framework of this study was based on Human Movement Model (Powell, Kelley K. Pettee Gabriel and James R. Morrow Jr.).

A correlational survey design was used to explore the student's physical activity, energy expenditure and body weight. In the present study, the sample included were 500 children of 8th, 9th & 10th standard between the age group of 14-16 years studying in selected secondary schools of Udupi district, Karnataka. Convenient sampling was used in the selection of district. Simple random sampling (lottery method of selection) was used to select the schools from the list of English medium schools of Udupi district obtained from the Deputy Director for Public Instruction (DDPI) and cluster sampling technique was used to select the samples from the selected schools.

The data collection tools used were: demographic proforma, physical activity questionnaire, energy expenditure calculation using Mifflin's Equation and anthropometric measurement.

Content validity was established by giving the tools to seven experts for review and feedback. All the required permissions were sought, including the approval from Institutional

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Ethical Committee before the commencement of the study. Pretesting was done among 10 participants and reliability was done among twenty participants from 8th, 9th & 10th standard of Shantiniketan School, Udupi Taluk. All the tools were found to be reliable.

The pilot study was conducted on 13/12/17 among 40 secondary school students in the age group of 14-16 years studying in 8th, 9th & 10th standard of Shri Vidyeshya Vidyamanya National English Medium School, Barkur and EHS Mahalaxmi School, Uchila to determine the feasibility of the main study and flaws in research design. The study was found to be feasible by the investigator.

Formal administrative permission was obtained from the Dean, Manipal College of Nursing, Manipal. Permission was obtained from the Principals of each school. Data were collected from December 2017 to February 2018, consent from the parents and assent from the participants were obtained.. Before starting data collection, a brief description was given to students regarding the study and how to fill the questionnaire. After completion of the questionnaire, anthropometric measurements were taken using weighing machine and measuring tape.

Data were analyzed using SPSS version 16.0. Both the descriptive and inferential statistics were used for identifying the results. Majority of the samples were boys 261(52.2%), most of them belonged to 14 years of age i.e. 228(45.6%). Most of the participants were in 9th standard 172(34.4%), 420(83.8%) children belonged to Hindu religion and majority, 338(67.6%) children belonged to nuclear family. Majority, 384(76.6%) children were having siblings and 496 (99.2%) children did not suffer from any health problem. Most of the children i.e. 296(59.2%) had sedentary physical activity whereas 204(40.8%) children were having moderate physical activity.

Energy expenditure was calculated using Mifflin's Equation and the values were then compared with the recommended values given by Food and Agriculture Organization (FAO).

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Most, 279(56%) students were having more energy expenditure and 221(44%) were having less energy expenditure than the recommended FAO guidelines. Among 279(56%) students having good energy expenditure, 35(12.54%), 40(14.33%) and 38(13.65%) girls were in the age group of 14 years, 15 years and 16 years respectively and 52(18.63%), 58(20.78%) and 56(20.70%) boys were in the age group of 14 years, 15 years and 16 years respectively. Among 221(44%) students with less energy expenditure, 44(19.01%), 47(21.27%) and 42(19.01%) girls were in the age group of 14 years, 15 years and 16 years respectively and 27(12.2%), 26(11.7%) and 35 (15.8%) boys were in the age group of 14 years, 15 years and 16 years respectively.

As the data were following normality, Pearson correlation test was used to find the relationship between the variables. The study reveals that there is no correlation between physical activity and energy expenditure ($\rho = 0.140$, $p = .390$), physical activity and body weight ($\rho = 0.160$, $p = 0.323$) and energy expenditure and body weight ($\rho = 0.187$, $p = 0.249$).

The study was limited to 8th, 9th and 10th standard students of selected secondary English medium schools of Udupi district, Karnataka. Therefore the generalization of the study findings can be done only to Udupi district, Karnataka.

The study findings concluded that out of 500 secondary school children most of them had sedentary physical activity. Most of the students have above normal energy expenditure, as per Food and Agriculture Organization (FAO) recommendation. There is no significant relationship between physical activity, energy expenditure and body weight.

Based on the present study recommendations were made for future study."