

Effects of Covid-19 on physical activity and eating behaviours and their mutual relationship

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Abstract

The study aimed to determine the relationship between physical activity and eating behaviours among the physical therapy students of various physical therapy institutes of Rawalpindi/Islamabad during the Covid-19 pandemic. The study was conducted from September 2020 to February 2021. It was a cross sectional correlational survey of a total of 209 physical therapy students, and the sampling technique was purposive sampling. Eating Attitude Test (EAT-26) Questionnaire and International Physical Activity Questionnaire (IPAQ) were used as the data collection tools. Healthy young students of 18-26 years of age, of both genders, were included and students with major functional limitations were excluded from the study. The results showed that 87 (41.6%) participants had normal EAT-26 scores whereas 122 (58.4%) had abnormal EAT-26 scores. IPAQ scores were categorically distributed into low, moderate, and high levels of physical activity. Eighty-seven (41.6%) had low levels of physical activity, 106 (50.7%) had moderate levels of physical activity, and 16 (7.7%) had high levels of physical activity. Spearman Rho test of correlation was applied with the p-value 0.219, and R-value of correlation was 0.08, which showed weak positive correlation between physical activity and eating behaviours. The study concluded that restricted physical activity and home confinement due to Covid-19 pandemic, did not potentially affect the physical therapy students' eating behaviours.

Keywords: Covid-19, Eating Behaviour (EB), Physical Activity (PA)

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Introduction

World Health Organisation (WHO) has defined physical activity as any bodily movement produced by skeletal muscles that require energy expenditure or any other

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form of movements performed by the body in a certain period of time.¹ Insufficient physical activity is a key risk factor for non-communicable diseases (NCDs) such as cardiovascular diseases, cancer, and diabetes, etc.² A healthy diet can be defined as a pattern of food intake that has beneficial effects on health or at least no harmful effects on the individual itself. However, increased use of processed foods, rapid urbanisation, and lifestyle changes have led to changes in dietary patterns to a large extent;³ due to self-confinement, people have developed unhealthy eating habits, insufficient participation in occupational, domestic, and leisure activities which have led to increase in sedentary behaviour.⁴ Eating disorder is an umbrella term that represents a number of disorders, such as anorexia nervosa, binge eating, and bulimia nervosa, etc. According to a recent international online survey, Covid-19 related quarantine correlated with more binge eating and this change in pattern greatly affected their behaviour and lifestyles choices.⁵ Maintaining a healthy weight is important for health, because increased body weight can pose a high risk of developing various cardiovascular diseases, stroke, diabetes, and high blood pressure, and various types of cancers. Although physical activity levels had been reduced greatly, due to pre-existing sedentary lifestyle of people of urban areas, it has been further decreased by Covid-19 related home confinement.

A Spanish study conducted on Eating Habits and Physical Activity during the Covid-19 Pandemic Period concluded that adherence to Mediterranean diet slightly increased during confinement, although consumption of 'unhealthy' food also increased. Moreover, the number of subjects who practiced physical activity, as well as the time spent on it weekly, decreased.⁶ Though no study regarding the relationship of physical activity and eating behaviours has been conducted in our geographical area, similar studies previously conducted in other regions across the globe had the major limitation of using validated questionnaires. So the rationale of the current study was to provide an insight of how physical activity status could affect eating behaviours among young physical therapy students with the help of validated

questionnaires.

Methods and Results

This was a cross-sectional correlational study conducted from September 2020 to February 2021. The sample size was calculated as 209 physical therapy students, using Rao soft⁷ with a margin of error of 5%, confidence interval of 85% and response distribution of 50%. They were sampled using purposive sampling technique and healthy young students of 18-26 years, of both genders were included. Students with major functional limitations, compromised physical activity, and diagnosed abnormal nutritional behaviours were excluded. Data was collected after approval by the Ethical Committee of Foundation University Islamabad. Informed consent was obtained from all the participants. Specific survey questionnaires were used. For lifestyle changes, International Physical Activity Questionnaire (also known as IPAQ), with Alpha value of $\alpha < .80$, was used in which results were interpreted in categorical form such as low, moderate, and high activity levels rather than continuous form, i.e. MET (Metabolic Equivalent) minutes per week.⁸ Regarding eating habits, the Eating Attitudes Tests (EAT-26)⁹ was used which is one of the most widely used standardised and highly reliable valid tool used for assessing changes related to eating. EAT-26 score consists of 26 items. A total score of EAT-26 at 20 or greater than 20 indicates a greater level of concern for problematic eating behaviours, dieting and/or body weight. The scoring of EAT-26 results focus on three major factors, i.e. the current BMI (body mass index), weight and its history, and lastly ideal body weight percentage. Demographic data (age, gender, BMI) and study variables (physical activity and eating behaviours) were recorded. Data was analysed using IBM SPSS version 21. Quantitative variables were expressed as mean and standard deviation. Qualitative variables were expressed as frequencies and percentages. Normality analysis was done to assess the statistical distribution of data by applying Kolmogorov-Smirnov tests that showed skewed distribution as p-value was less than 0.05. Spearman-Rho correlation test was applied to study the correlation between the two variables.

The data of 209 participants were evaluated. The mean age was 21.8 (\pm 2.17) years, of which 168 (80.5%) were females. Mean BMI (kg/m²) was 21.94 (\pm 4.14).

IPAQ scores were categorically distributed into low, moderate, and high levels of physical activity; 87 (41.6%) had low levels of physical activity, 106 (50.7%) had moderate levels of physical activity, and 16 (7.7%) had

high levels of physical activity. EAT-26 scores: 87 (41.6%) participants had normal EAT-26 scores, whereas 122 (58.4%) had abnormal EAT-26 scores. The correlation coefficient value was 0.085 which showed a weak positive correlation between physical activity and eating behaviours whereas the p-value was 0.219, elucidating statistically insignificant correlation between the two variables as the p-value is greater than 0.05.

Conclusion

Overall, the study concluded that restricted physical activity and home confinement did not potentially affect the students' eating behaviours. However, the study data indicated that large number of Physical Therapy students had abnormal eating behaviour with low level of physical activity during the Covid-19 pandemic. Although quarantine is an essential measure to protect public health and control the transmission of the virus, these findings should be taken into consideration.

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