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**RESEARCH PAPER**

# Covid-19, Eating Behaviour and Related Limited Physical Activity in University Students of Islamabad

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**ABSTRACT**

The sudden epidemic of Coronavirus disease (COVID-19) in March 2020 impelled the government to implement disease control measures resulting in home quarantine, isolation, and restricted outdoor activities for people of all ages. Though such controlled measures were essential to abate the spread of COVID-19, they impacted the daily activities of youth resulting in overall reduced physical activity and leading to a sedentary lifestyle among them. Moreover, disruption of normal routines and consequent boredom impacted their eating behaviors by swaying their regular meal patterns. The objective of the present study is to explore the relationship between physical activity and eating behavior among youth during the COVID-19 pandemic period. The duration of the study was 10 months from January 2021 to October 2021. The sample was chosen and data was collected through questionnaires provided in hard forms well as web-survey. Results revealed that there is no relationship between physical activities and eating behaviors, also home quarantine and limited physical activity had no effect on their eating behavior.

**KEYWORDS** Covid-19, Eating Behaviours, Obesity, Physical Activity

## Introduction

Physical activity is the key to improving the health of the nation (Rosenberger, et al, 2019). Leisure time physical activity such as cycling and walking increases more with the accessibility of natural environment (including the coast, woodlands, inland waters, and parks) (Soga, & Gaston, 2020). Outdoor activities encourage people to be more physically active producing long-term benefits to their physical as well as mental health. On the flip side, less physical activity could be a leading contributor to death globally (Verma, et al, 2021). A healthy diet is required to attain a good healthy life. A Healthy diet includes a pattern of food intake that is beneficial for health and less damaging to an individual's health. A healthy diet or at least an adequate diet with the right number of fiber is extremely necessary (Camerotto, et al, 2019). However, changes in people's lifestyles, rapid urbanization, and increased manufacturing of processed food have led to changes in diet patterns to a large extent (Ahmed, et al, 2022). During isolation time during Covid-19 people developed certain eating habits which were fruitful for increasing alertness and energy level, healthy relationships with food, improved health, and better physical image and movement (Paterson, et al, 2021). Nutritional behavior and physical activity have a strong association and disturbance in any of the factors may lead to serious disturbances in health and a healthy lifestyle in an individual (Firth, et al, 2020). The latest statistics of physical inactivity documented were comparatively due to a lack of involvement in physical activities during free time and a rise in lethargic behavior during domestic and business hours. Mainly due to a lack of any other activity or an increase in food consumption, both factors are considered debilitating factors for a healthy person (Kaur, et al, 2020). Therefore, it is important to explore the influence of physical activity and eating behavior among youth. Consistent physical activity is vital for several medical treatments like diabetes mellitus, overweight,

obesity, and cardiovascular conditions because it may require little appetite control (Amanat, et al, 2020). Also eating behavior has effects on weight control but it could have a different impact on sedentary and active subjects. Since March 2020, the sudden massive spread of coronavirus (COVID-19) in Pakistan had brought the country into uncharted waters. According to the current situation to fight the COVID-19 virus, the Pakistani government just like most countries approved a lockdown on 16th March 2019 (Nafees, & Khan, 2020). Restricting all the other forms of contact either work or study of related thus automatically leads to a number of severances affecting the physical activity of many adults (Verma, & Prakash, 2020).

Initially, it was very challenging for people to adjust to these unprecedented developments that occurred so rapidly to achieve social distance in risk of infection (Simonovic, Kundzewicz, & Wright, 2021). Across the globe, people had to stay at home and were only permitted to go out for buying food or some other serious health issues. Almost, all work-related activities were deferred or turned online, apart from essential activities like the cleanliness of cities, food supply and sales, health care workers, and police, etc. (Singh, 2021). The most important essential public health response to current concerns about lack of physical activity requires keen monitoring of demographic levels of physical activity. Restrictions caused people to limit themselves to homes, thus reducing the time they spent outside on physical activities like jogging, walking and running, etc. (Berengüí, López-Gullón, & Angosto, 2021). According to recent online research published by Cambridge University Press in July 2020 (Karlsen, et al, 2020)., related to weight and its normality, it was observed that people with normal weight are not troubled by obesity or overweight, and they were less aware of about weight gain as compared to people with BMI ≥ 24 and subsequently they had the tendency to gain weight under the lockdown phase of pandemic without being aware of it consciously.

The sudden arrival of this global pandemic had greatly affected the lifestyles of young as well as older adults especially about to those who were well-fitted and physically fit as well (Giubilini, Savulescu, & Wilkinson, 2020). The disruption of daily routines impacted the lifestyles of the citizens especially students, in numerous ways and led to overall reduced physical activity, a sedentary lifestyle, and unhealthy eating behaviors. Dietary modifications are mainly related to daily changes, food preparation, and emotional reasons, but also voluntary changes to adapt to the current situation person (Kaur, et al, 2020). An increase in a vast amount of food intake was seen especially during the lockdown phase.

Another study was conducted for assessing the changes in dietary habits and weight that stated the COVID-19 pandemic manifested upon and consequent lockdown phase had resulted in the least amount of exercise, extreme boredom along with self-report loneliness, anxiety, and depression, abruptly increased food intake, snacking, unhealthy foods, whole grains, and sweets which are chiefly associated with significant weight gain (Aloudah, 2021).

According to a recent survey report, it was observed that the coronavirus pandemic has a great impact on people and their lifestyles especially affecting their physical activity and subsequently changing their eating habits. Thus, a vast amount of the population was affected who were physically active before the lockdown. Those who were inactive even before the pandemic were increasing their dietary intake even with further decreased physical activity owing to environmental factors. The most prominent and eminent contributing factor related to the changes in physical behaviour was the confinement in homes for an unspecified period of time (Pérez-Rodrigo, et al, 2021).

Even though the adult population was affected the most affected ones among the general population were the young adults owning to their sudden lack of activity and a huge rise in daily intake. Rendering them to be more prone to non-communicable diseases at an early stage of life.

Not only this, but due to the involvement of various factors one of a few being stress, anxiety, and inactivity, alterations in weight were the more significant ones, especially in a younger population.

In order to eliminate its disastrous effects on individuals especially the youth i.e., NUML and IQRA students. The study is designed to promote awareness among the young people about unhealthy lifestyles and its changes on physical inactivity particularly during COVID-19 pandemic. For this purpose, it is important to understand the exercising and eating habits of youth and NUML and IQRA students, especially during the time period of the global pandemic. This will not only help to reduce the risk of diseases related to non-healthy eating habits but will be a good way of spreading information on the issue among the people. The main objective of this study is to elucidate the effects of home confinement along the reduced physical activity and changes in lifestyles especially in eating behaviors among NUML and IQRA students residing in Rawalpindi and Islamabad. And also, to provide a sense of awareness among the students about their physical fitness and activity levels, especially for students whose work environments are more related to manual work. The secondary purpose is to study the adverse effects of eating and attaining a sedentary lifestyle on an individual's health due to the Coronavirus pandemic mainly is the aim of my study.

**Literature Review**

Regularly performed moderate-intensity physical activity produces immense benefits on an individual's health and lifestyle but these benefits can be at odds for the individual if he does not stick to healthy meal patterns (Molina-Cantero, 2021) It seen that an observational study was conducted that suggested of almost 2 million deaths per year worldwide being ascribed primarily due to physical inactivity, this was conducted in the UK. A great number of studies were done in the past and are available in the current literature review throwing light upon the fact that regular physical activity and regular eating patterns go in hand in hand together in order to maintain the physical and mental health of an individual (Frank, Engelke, & Schmid, 2003).

It was seen through the literature review that some of the immediate results of the confinement period were that the people had to stay at home more than usual, interrupting their usual daily life activities eventually changing their physical activity status and subsequently changing their habits such as eating. Another one of the studies suggested that there are some imminent changes in the physical activity of individuals occurring owing to the social distancing that is being observed in order to prevent the spread of coronavirus (Mattioli, et al, 2020). The results were observed and analyzed to being that of about 75% of the participants met the physical activity guidelines during their social distancing ultimately decreasing their physical activity and thus affecting their behaviors such as eating habits and energy expenditures gradually leading them towards changes in their physical appearances due to lack of significant physical activity.

Under another one of the studies named as Obesity, eating behavior and physical activity during COVID-19 lockdown, it was also being observed that during Covid-19 pandemic a disruption in the chain of supplies and the increased reliance on unhealthy food along with a decrease physical activity was eminently seen in adults (McCormack, et al, 2022).

A lot of researches were conducted during the year 2019 and 2020. Another one being the cross sectional study titled as the "Associations between Changes in Health Behaviors and Body Weight during the COVID-19 Quarantine in Lithuania" (Kriaucioniene, et al, 2020). aimed to estimate the effect of the quarantine on the diet, physical activity, and habits of the Lithuanians and their association between health behaviors and consequent weight changes. Furthermore, from this study, it was recorded that 49.4% of people ate

more than usual leading to a decrease in physical activity in about 60.6 % of the participants. This study was thoroughly conducted online due to preventive measures and subsequent lockdown while the data was collected via online form filling by the participants.

One of the studies was performed by researcher Eduardo Sánchez-Sánchez et al. in May of the year 2020 in Spain during Covid-19 Pandemic which is quite a recent research as well. They similarly had also performed a cross-sectional descriptive study on the Spanish population. The data collection technique was the self-administered questionnaire being used in their study. The sampling techniques used were a Non-probability sampling techniques to target the above-mentioned sixteen (16) years old Spanish population. The sample size was consisting of a total 385 subjects. The main goal of their study was to explore the physical activity, consumption, and dietary patterns of Spanish population, also time period of quarantine and self-confinement during Covid-19 restrictions.

As the world is being struck by coronavirus the social distancing and confinement were observed which was to control the COVID-19 situation, hence numerous restrictions concerning the health of the general public, the governmental sector did some measures resulting in numerous changes in the daily life of the people. These changes included social distancing, isolation, and home confinement.

Not only this but also the COVID-19-related quarantine was correlated with binge eating and devouring food of substandard quality according to a recent international online survey performed in the same year of the pandemic. It was evidently seen that in the same survey, the participants when changed their eating behaviors, especially towards unhealthy food consumption, this change in pattern greatly affected their behavior and lifestyle choices.

Analysis of the data gathered from the students participating in the Massachusetts Youth Risk Behavior Survey (YRBS) was conducted in a study named "Eating patterns, physical activity, and attempts to change weight among adolescents". The presented results depicted the dietary factors associated with physical activity and their overall effect on young students.

In another attempt of explaining body weight, eating patterns and the overall physical activity status of people a study was conducted in July in the year 2014 under the title "Body Weight, Eating Patterns and Physical Activity: The Role of Education" (Rodríguez-Larrad, 2021). In their formerly explained published article they had empirically studied the role of education and its attainment on an individual's Body Mass Index (BMI) along with their eating patterns, their subsequent lifestyles and their physical activity status altogether.

Moreover, not only this but a number of similar studies was conducted on different regional levels in accordance with the effect of the covid-19 quarantine time period. Many of them out of which one of countries is Romania conducted the study on "Eating Patterns, Physical Activity and their association with the demographic factors in the population included in the obesity study in Romania" (Roman, et al, 2016). Their analysis turned out to be that a high number of young people had unhealthy lifestyles habit as compared to the elder population. Out of these the highest frequency of unhealthy behavior turned out to be in the age group of young individuals from 18 to 39 years of age.

Next in line for the recent research conductance by a country has none other than the country of Spain. They also conducted a similar study to our study on physical activity, eating behaviors, and the COVID-19 situation. Their study was named "Eating Habits and Physical Activity of the Spanish Population during the COVID-19 Pandemic Period" (Sánchez-Sánchez, et al, 2020). It was also a cross-sectional descriptive type of study conducted in May 2020, which was also conducted through online form filling.

Another study by the same Spanish population was held on similar topics not once but quite a time. This time they studied the effects of COVID-19-induced confinement at home resulting in changes in physical activity along with behavioral changes in eating patterns. This study mainly aimed at the total estimation of self-reported physical activity as well as the sedentary time (ST) of the individual that had varied during the confinement time period.

Furthermore, coming towards one of the most badly affected countries by coronavirus Italy, they had also done their share of research on the effects of confinement, physical activity, and the lifestyle changes affect most prominent in their population. They were greatly determined to study and investigate the immediate impact of the COVID-19 pandemic on eating habits and various lifestyle changes among the Italian population as they were greatly affected by the pandemic. Their population was mostly young individuals aged above 12 years of age.

On account of this pandemic and it is affecting the global village a cumulative study (Chan, 2022) was also performed under the term of global research in the same context not just by one or two countries but simultaneously by number of countries. It was performed by a total number of 35 organizations altogether consisting of the countries such as those from Europe, North-Africa, Western Asia and the Americans who had promoted this survey immensely through their networks to the general society.

## Material and Methods

The study is an online survey report that took almost 10 months to complete. It was conducted between January 2021 till October 2021. The data was collected from the resident students of Rawalpindi and Islamabad. They all were students of Mass communication from the National University of Modern Languages and Iqra University. The survey was filled by 500 respondents out of which 450 were appropriate for inclusion in the sample. The sample was a purposive sample. Later on the basis of inclusion and exclusion criteria, only 356 studies were further analyzed. Inclusion and exclusion criteria were used for refining the study sample.

### Inclusion Criteria

This is a criterion by which the participants were included in the research:

1. Age (18-30) years
2. Both genders (male and female).
3. Those who had no food restrictions and provided an informed consent form.
4. Young NUML and IQRA students.

### Exclusion Criteria

This is the criterion by which participants were excluded from this study:

1. Students who were affected with major health conditions compromising their physical activity.
2. Students who had health conditions causing limitations in their nutritional behaviors.

### Data Collection Procedure

1. Date collection procedure was started after the construction of the questionnaire. The research project was conducted using a specific survey questionnaire concerning physical activity and eating habits, and changes in lifestyle among the NUML and IQRA students of Islamabad/Rawalpindi.

2. All the respondents were informed about the requirements of the study prior to accepting the privacy policy and data sharing before filling out the questionnaire. In order to protect confidentiality and maintain privacy respondents' personal information including their names was kept anonymous

3. Questionnaires were provided in a web survey using google forms to collect the data

**Data Collection Tools**

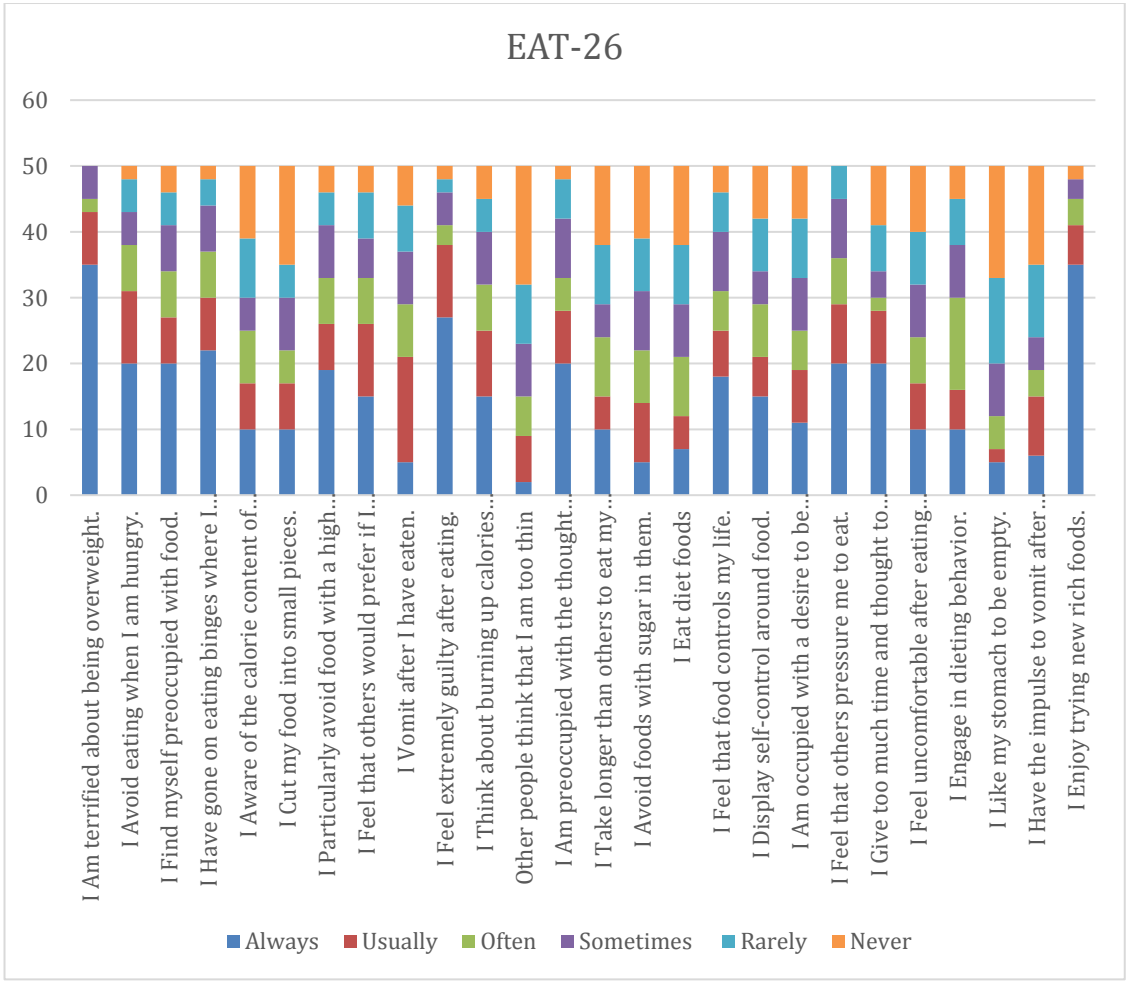
**EAT-26**

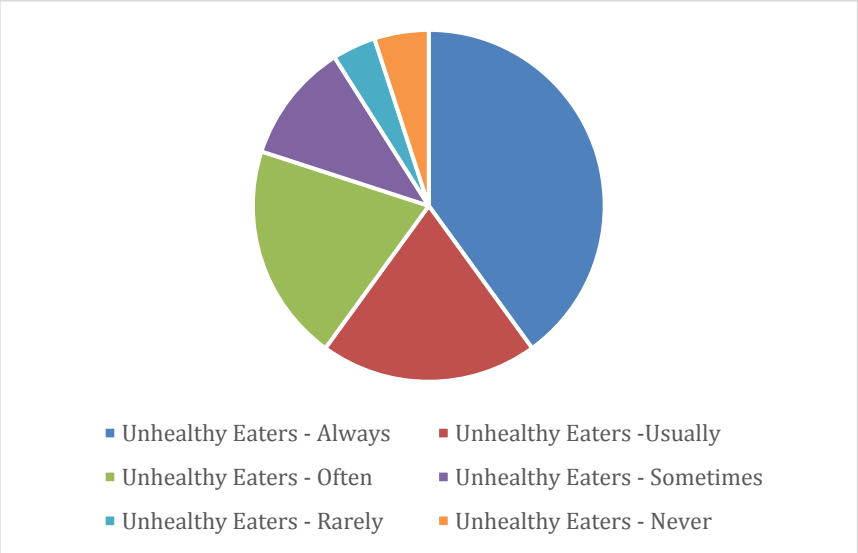
Questions 1-26 comprise 26 general questions related to an individual's eating habits and the psychological facts associated with them. Questions regarding dieting scale items: 1, 6, 7, 10, 11, 12, 14, 16, 17, 22, 23, and 24. As it is easily suggested by the name of the questionnaire the EAT-26 consists of a total number of 26 items.

**IPAQ-short version:**

International physical activity questionnaire also known as IPAQ is a self-report questionnaire that measures the total amount of health-related physical activity performed by an individual on the course of seven days of a week mainly addressing to the time they spent in sitting as well as the physical activities they performed in their daily life.

**Results**






Results showed that during the period of quarantine, there was a rise in eating unhealthy food. There are a lot of people who turned into unhealthy eaters, which depicted a positive adherence physical inactivity during this time. Due to pandemic the ratio of people who used to exercise got decreased along with the decrease in the exercise hours. Furthermore, the intake of other unhealthy food including fast foods, confectionaries, soda beverages, snacks and sweets were also increased. In addition to this, the amount of subjects who were physically active were also reduced.

## Conclusion

It has been known that physical activity or any other exercise has a huge impact on the health of an individual. This can be combined with the eating patterns of that individual to further assess the outcomes as physical activity and eating behaviors are the two main factors that have a strong impact on an individual's mind as well as physical health. This implicates young individuals as evidently as our elder population. Hence eating and physical activity behaviors among students can be observed by the relationship between their self-regulatory skills and motivation which can be unique according to their social and physical environment. Another aspect of influence is gender differences have also been seen affecting the physical activities as well as eating behaviors of young individuals. It is obvious that healthy eating and physical activity (PA) are automatically related to an individual's beliefs and healthy environmental perception. The study aimed at exploring the relationship between physical activity and eating behaviors and how the level of physical activity affects the eating behaviors of NUML and IQRA students, especially during the COVID-19 Pandemic. It was also comprehended that the different levels of physical activity were also to be examined to see the changes that are caused during the period of self-confinement.

In order to conduct this study, two questionnaires were utilized. Two questionnaires were used i.e, the First questionnaire was International Physical Activity Questionnaire IPAQ (short form) and the second was the Eating attitude. The first EAT-26. First questionnaire was used to assess the physical activity level of the individuals and the other questionnaire was to check the Eating attitude test IPAQ short version basically contains 7 questions to evaluate the physical activity that people usually perform in their everyday life along with how much time they spend as a physically active person altogether. EAT-26 contains 26 questions in order to assess the risk of developing eating disorders. Both questionnaires rigorously provided data in support of relationship between physical activity and eating behaviors among NUML and IQRA students which fulfilled the major aim of the study. It was observed that during quarantine, the Diet increases, as during the confinement,

people practicing exercise was decreased. Furthermore, the intake of unhealthy food including fast foods, confectionaries, beverages, snacks, and sweets etc. was significantly increased. In addition to this, the number of people who were physically active significantly decreased.

Discussing the eating behavior in this study, it was observed that most people are somehow concerned about their weight increase during covid-19 but they do not maintain the calorie count and intake consumption of their food. EAT-26 has given me a clear picture of the general habits which most of the subjects followed in this quarantine, e.g. avoiding starch or fat-enriched processed food most 40% of the total subjects do not avoid unhealthy food rest of the population is categorically somehow divided into 20%, 20%, 11%, 04% and 05% percent which somehow gave the answers differently and to some extent and avoids junk food. Talking about diet and dieting behavior many subjects were less motivated to follow diet food and were very eager to eat sugary food. But at the same from my survey I observed that people are very much conscious about their physical looks and in a desire to look thinner. Moving forward when it comes to an empty stomach rarely people like it to be empty and some even never kept it empty. Due to home confinement, there is more online food available and people are very much happy to order online rather than eat or cook healthy food. Junk food has grabbed the attention and in this quarantine, most youths spend their time eating or killing time on social media. Talking about physical activities there is a very less number of youth who exercise daily and maintain good physical activity even during Covid-19. The closure of Gyms is also a big reason people are unable to exercise regularly at home. So ultimately there is a decrease in physical activity as well.

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