

Impact of Sedentary Lifestyle on Physical Activity and Quality of Life of Undergraduate Students during SARS-Cov-2 Pandemic Lockdown

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Highlights:

- Sedentary life style and its effects on physical activity
- No statistically significant association was found between physical activity and quality of life but it can be stated that physical inactivity and sedentary behavior impacted both genders equally in terms of fair quality of life.

Abstract:

Background: Sedentary lifestyle can increase the complication of many cardiovascular diseases. The Physical inactivity can induce many cardiovascular and metabolic diseases in people. It can even cause deaths in people.

Objective: The purpose of the study is to analyze the effect of lockdown on physical activity and sedentary lifestyle. Secondary aim was to know if the changes in sedentary behavior and physical activity have affected the quality of life of undergraduate students.

Methods: A descriptive cross-sectional study was conducted on 187 responders. Participants were recruited using convenience sampling techniques. Data was collected via online questionnaire from the undergraduates of Lahore. Duration of study was within 2 months after the approval of synopsis.

Results: The result of the study was that there were 76(40%) were male and 111(60%) were female out of 187. Mean age was 21.17 and standard deviation was 2.40801., 6(3%) did vigorous activity in 4 days in last seven days and 122(65.2%) did activity in seven day. P value above 0.05 indicates insignificant differences of quality of life among various categories of physical activity during lockdown in both males and females. There are no differences on basis of gender as well. Physical activity level impacted quality of life equally all.

Conclusions: No statistically significant association was found between physical activity and quality of life but it can be stated that physical inactivity and sedentary behavior impacted both genders equally in terms of fair quality of life.

Key Words: sedentary lifestyle, physical activity, quality of life, undergraduates, SARS-Cov-2, Pandemic lockdown.

Introduction:

Coronaviruses cause acute and chronic respiratory, enteric, and central nervous system (CNS) diseases in various species of animals, including humans.^{1, 2} SARS-CoV is recently identified, which can cause severe acute respiratory syndrome is the serious illness in humans caused by a coronavirus.³ Covid-19 have drastically affected the human life since 2019 December.⁴ It has cause serious public health crisis affecting daily live routines.

Coronavirus outbreak in Pakistan on 26 February, 2020. After that the country went on high alert. Strict measures were taken to avoid the spread of coronavirus.⁵ Schools, colleges and universities were closed and smart lockdown was reinforced.⁶ Self-isolation, social distancing and quarantine were the basic measures that were practiced by Pakistani population.^{7, 8} Not only the general population but the health care workers were most affected by the spread of the virus.⁹ Quarantine is the necessary and the most important measure that should be taken to control the spread of this communicable disease.

Sedentary lifestyle can increase the complication of many cardiovascular diseases. The Physical inactivity can induce many cardiovascular and metabolic diseases in people. It can even cause deaths in people. According to literature people who are physically active have less risk to develop cardiovascular diseases than people who are living a sedentary lifestyle.¹⁰ The reason is that physical activity improves the cardiorespiratory working and thus prevents the individual from having various diseases.¹¹ That is why being physically active and by avoiding the sedentary behavior individuals will be able to enjoy a better quality of life. Physical activity helps to improve balance and overall general health of individuals.¹²

To prevent sedentary lifestyle different strategies should be used like people should take active breaks, get up and start walking around the house and to follow online workouts.¹³ During the pandemic the level of physically activity is reduced and thus people became sedentary. There is also 28.6% rise in consumption of unhealthy food because of this covid situation.¹⁴ Increased level of anxiety and reduction in levels of physical activity was observed in university students because of Covid-19.^{15, 16} During lockdown there was an opportunity for everyone to do some physical activity to pass the time. But majority of the population became sedentary and become less active.¹⁷

There is a major agreement towards the decrease of physical activity and a significant increase in sedentary behavior during SARS CoV-19 especially due to the prolonged confinement. A few studies suggested that females are more affected by this lockdown period and their PA is disturbed more than boys but majority of the studies state that PA is highly affected in both genders, which in return is targeting the quality of life.

The purpose of the study is to analyze the impact of lockdown on physical activity and sedentary lifestyle. Secondary aim was to know if the changes in sedentary behavior and physical activity has affected the quality of life of undergraduate students.

Methodology:

A descriptive cross-sectional study was conducted on 187 responders. Participants were recruited using convenience sampling techniques. Data was collected via online questionnaire from the undergraduates of Lahore. International physical activity questionnaire (IPAQ) and quality of life scale was used to collect data and measure sedentary lifestyle, physical activity and quality of life of undergraduate students from different institutes of Lahore. The demographic and physical characteristics (age, gender, height, weight, place of residence, educational institute) of participants were recorded. Sedentary behavior was measured using the International Physical Activity Questionnaire—Short Form (IPAQ-SF), which contains 7 questions. The questionnaire was used to obtain the total minutes of physical activity per week and sitting time per day. QoL's 15 questions were used to analyze if increased sedentary lifestyle has any impact on quality of life of undergraduate students.

Results:

The result of the study was that there were 76(40%) were male and 111(60%) were female out of 187. Mean age was 21.17 ± 2.4 . 6(3%) did vigorous activity in 4 days in last seven days and 122(65.2%) did activity in seven day. P value above 0.05 indicates insignificant differences of quality of life among various categories of physical activity during lockdown in both males and females. There are no differences on basis of gender as well. Physical activity level impacted

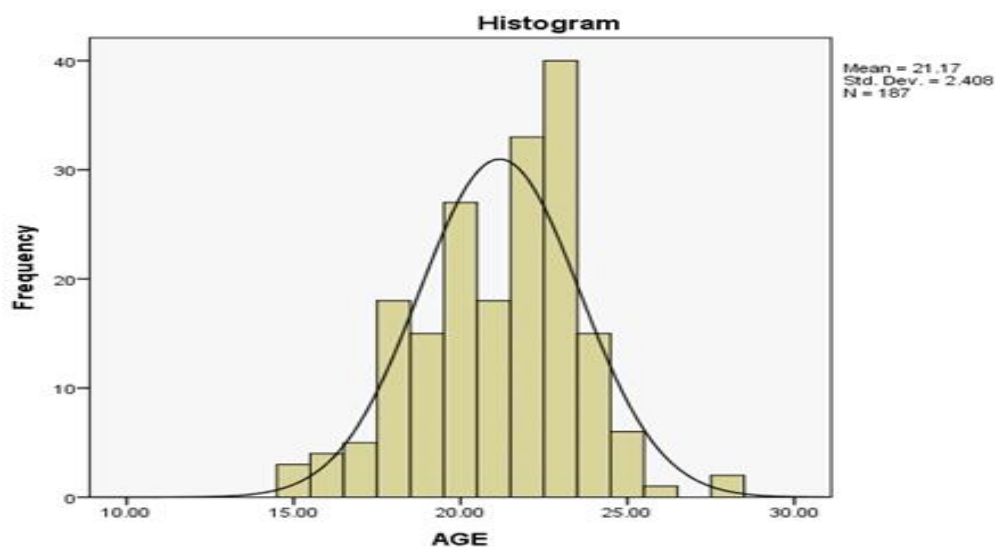


Figure 1: Histogram of age

Table 2 explains that 114(61.0%) were inactive, 27(14.4%) were moderate and 46(24.6%) were highly active in IPAQ scoring.

| IPAQ Score categories interpretations | | |
|---------------------------------------|-----------|---------|
| Ranks | Frequency | Percent |
| Inactive (low activity) | 114 | 61.0% |
| Moderate (Minimally active) | 27 | 14.4% |
| High (Highly active) | 46 | 24.6% |
| Total | 187 | 100 |

Table 2: Frequency of IPAQ score categories

| Physical activity categories* Quality of life cross tabulation | | | | | | |
|--|-------------------|-----------------|------|------|-------|---------|
| | | Quality of life | | | Total | P-value |
| | | Poor | Fair | Good | | 0.722 |
| Physical activity | Inactive | 14 | 92 | 8 | 114 | |
| | Moderately active | 2 | 23 | 3 | 27 | |
| | Highly active | 5 | 49 | 1 | 46 | |
| Total | | 21 | 155 | 11 | 187 | |

Table 3: Cross Tabulation Physical activity and quality of life

P value above 0.05 indicated insignificant results which interpreted that there is no association present between physical activity and quality of life in this sample of population.

Discussion:

In the study 187 participants were included in the study with mean age 21.17 ± 2.4 . The study included 40.6% male and 59.4% of female participants. 61% of the participants show physical inactivity during covid 19 Pandemic. No statistically significant association was found between physical activity and quality of life but it can be stated that physical inactivity and sedentary behavior impacted both genders equally in terms of fair quality of life.

Similar to the study another study was conducted in 2020 to know about the difference of student physical activity and sedentary lifestyle before lockdown and during lockdown. 213 people participated in the study. Just like the current study low level of physical activity was observed in the study. The study found changed behavior during the time of covid 19 lockdown. People were more inclined towards unhealthy activities. Low physical activity along with increase in sitting time during lockdown was observed in the study.¹⁸ Another study in 2020 showed similar results like the current study that sedentary lifestyle is observed in the participants. The study concluded that not just the older population but young population is also physically inactive which is very concerning thing. The study recommends that physical activity should be promoted.¹⁹

Another study performed by Eszter et. al in 2020 showed similar results like the current study that sedentary lifestyle is commonly found in all the participants during Covid-19 pandemic and it will leave an impact on their lifestyle for a long time.²⁰

A study recommended that physical activity is very beneficial for the overall health of the individuals. It has positive effects on physical and emotional health of individuals. Physical activity is also important to improve the condition of patients dealing with chronic diseases.¹⁹
²¹ A research done in 2020 revealed that persons who stayed at home had more musculoskeletal problems than people who worked at a workstation, which is comparable to the current study. In contrast to the current study, the participants' sleep quality was also discovered. In the study, poor sleep quality was discovered due to a lack of physical exercise.²²

The current study goes with the literature as majority of the studies acknowledge the fact that lack of physical activity brings many health issues and musculoskeletal problems. Covid-19 pandemic has changed the lives drastically but sedentary lifestyle behavior is making this time even more drastic. To prevent the musculoskeletal systems instead of this COVID situation some physical activities should be promoted. Activity breaks should be taken to avoid the sedentary behavior.

Conclusions:

Most of the population becomes physically inactive during lockdown and due to sedentary lifestyle; their quality of life is also compromised as majority had fair quality of life. No statistically significant association was found between physical activity and quality of life but it can be stated that physical inactivity and sedentary behavior impacted both genders equally in terms of fair quality of life.

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