

ORIGINAL ARTICLE

IMPACT OF LOCKDOWN DUE TO CORONAVIRUS DISEASE (COVID-19)
ON THE WEIGHT RELATED QUALITY OF LIFEFarhat Ijaz, Uswah Bokhari*, Uswah Shoaib*, Sehar Khauteja Khan*, Sana Tariq*,
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Background: The current lockdown due to the COVID-19 pandemic has clearly led to changes in the lifestyles of people. This study aimed to determine the effects of this lockdown on the lifestyles of individuals and ultimately the overall changes in weight-based quality of life in the undergraduate students of Pakistan. **Methods:** This cross-sectional study was conducted on participants of ages 18–25 from different universities around Pakistan. The questionnaires were sent to participants via WhatsApp, posted online using Microsoft forms. A total of 157 responses were received. The questionnaires were adapted using Impact of Weight on Quality of Life (IWQOL). Chi-square test was used for comparison of categorical variables, and $p < 0.05$ was considered statistically significant. **Results:** Out of 157 responses, 109 were females and 48 males. The mean weight before and after the lockdown was 61.95 Kg and 64.97 Kg respectively. Significant changes in areas of physical function, self-esteem and work were attained with $p < 0.001$, 0.002, and 0.023 respectively. **Conclusions:** The lifestyle changed and as a result the weight of the undergraduate population of Pakistan generally increased during the lockdown due to the COVID-19 pandemic. Self-esteem decreased among the youth and they faced mental health issues including anxiety and distress due to direct effects of lockdown on lifestyle.

Keywords: Lockdown, Obesity, Lifestyle, Anxiety, Body image, Stress, Physical function

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INTRODUCTION

As countries started to lockdown in March 2020 with the surge in COVID-19 cases, people were forced to spend most of their time indoors. Stress and anxiety among the people increased.¹ The factors that contributed significantly to this rise include not only the fear of infection but also the long duration of isolation, running out of basic commodities, boredom, frustration due to financial strains and unemployment.¹

As the uncertainty surrounding the duration of the pandemic increases, people tend to make unhealthier lifestyle choices. People tend to choose foods with a longer shelf life that are highly processed and rich in calories.² This not only affects adults but also children. As schools, workplaces, and gyms closed down, opportunities for physical activity also declined. Previous studies have established lower frequency of vigorous physical exercise is significantly associated with higher rates of diagnosed depression.³ People also have an unhealthier sleeping pattern during holidays.⁴ All of these factors, i.e., unhealthy diet, lack of physical activity, and poor sleeping habits cause lower quality of life.⁵ A decline in health-related quality of life (HRQOL) has been reported by a study conducted in China with pain/discomfort being the most frequently reported problem followed by anxiety/depression.⁶ On the contrary, a study in Vietnam found that HRQOL was better during the pandemic than before.⁷ Another study in China found a mild stressful impact of the pandemic with more than half the population reporting

fear but a majority did not feel helpless. It also reported increased support and care from friends and family leading to positive mental health-related lifestyle changes.⁸ Ferreira *et al* report higher anxiety and lower HRQOL levels in Portuguese with women and the elderly most prone to the problem.⁹

Since the start of the pandemic, several research articles have come forward demonstrating the effect of the pandemic on mental, emotional, and health-related quality of life worldwide. However, the research on this topic on Pakistani population still seems to be absent. This study analyses weight gain during the pandemic as a direct measure impact of weight on quality of life in a quantitative manner. Previous studies to evaluate the threat of obesity and worsening quality of life post-pandemic have been conducted in UAE, Spain, Croatia, Italy, and Poland.^{10–13}

This study aims to find changes in the weight-based quality of life of undergraduates during the lockdown (Mar–Sep 2020) and its impact on physical function, self-esteem, public distress, and work life. It also aims to highlight the problem to promote awareness for adequate measures to reduce the risk for lower perceived quality of life.

METHODOLOGY

Ethical approval was given by the Ethical Committee of CMH Lahore Medical College and Institute of Dentistry (No. 485/ERC/CMHLMC). Participants included both males and females enrolled in different universities of

Pakistan and belonging to the age group of 18–25 years from mid-March 2020 to mid-September 2020. The exclusion criteria included participants younger than 18 years or older than 25 years and those not enrolled in a university of Pakistan. The sample size was calculated to be 157 using the Rao soft formula with 95% confidence interval and 5% margin of error. The population size used was calculated by using values of Zachary *et al.*⁵

Questionnaires were administered online using Microsoft Forms in August and September 2020. The questionnaires were adapted using Impact of Weight on Quality of Life (IWQOL).¹⁴ The questions designed included questions from the areas: physical function, self-esteem, public distress, and work, respectively. Question 1 to 6 collected bio-data of the participants including name, age, gender, university, last measured weight before the lockdown, and weight at the time of filling the questionnaire. Question 7–16 were adapted from the IWQOL. Each question was rated on a three-point Likert scale with ‘Never’ scoring 0 points, ‘Sometimes’ scoring 3 points, and ‘All the time’ scoring 5 points. The scores were additive and higher scores meant a greater impact of weight gain on physical function, self-esteem, public distress, and work.

The data were analysed on SPSS-26 for mean score, and standard deviation of all variables. The highest scores possible were 15, 20, 5 and 5 for physical function, self-esteem, work, and public distress respectively. The lowest score for all variables was 0. The total score was achieved by summing all scores. Results were presented as frequency and percentages. Chi-square test was used for comparison of categorical variables, and $p < 0.05$ was taken as significant.

RESULTS

One-thousand people were contacted to fill the survey. Only 162 responses were collected of which 5 were rejected due to incomplete data or not meeting the inclusion criteria, and 157 people who completed the survey were selected. A total of 109 were females and 48 were males. The participants (n=157) were in age group

18–25 years with mean age of 21.2 ± 1.19 years. The mean weight before the lockdown was 61.95 ± 13.8 Kg and after lockdown was 64.97 ± 13.6 Kg, with a mean increase of 3.02 Kg. The average score for part 1 of the survey assessing the quality of life was 12.19 ± 3.24 before lockdown and 12.86 ± 3.89 after the lockdown (Table-1). The increase in this score was not significant.

On breaking down the data into areas of physical function, self-esteem, work, and public distress, a significant impact was seen on physical function, self-esteem, and work but not public distress. The p were < 0.001 , 0.002 , 0.023 , 0.612 for areas of physical function, self-esteem, work, and public distress respectively (Table-2).

A deeper analysis of the data found physical function declined in two variables relating to moderate exercise. Trouble climbing stairs/running ($p=0.033$) and trouble with stiff joints ($p=0.002$) were the two significant problems faced by the population after lockdown. The area of self-esteem also showed significant differences for fear of being rejected ($p=0.04$) and avoiding looking at oneself in mirror or photographs ($p=0.033$). The differences were significant ($p=0.02$) for the variable concerning the area of work, i.e., trouble getting things accomplished or meeting my responsibilities. The variables for public distress did not prove to have a significant p -value (Table-3).

Table-1: Scores and standard deviation for assessment of weight and the quality of life

	Assessment of weight (Kg)	Assessment of quality of life
Average Score	Mean±SD	Mean±SD
Before lockdown	61.95±13.8	12.19±3.24
After lockdown	64.97±13.6	12.86±3.89

Table-2: Scores for areas of physical function, self-esteem, public distress, and work before and after the lockdown in population (Score, Mean±SD)

Parameters	Before lockdown score	After lockdown score	p
Physical Function	2.21±2.90	3.00±3.46	0.000
Self Esteem	5.00±5.48	5.89±6.24	0.002
Work	0.42±1.13	0.57±1.36	0.023
Public Distress	1.36±1.66	1.41±1.74	0.612

Table-3: Variables for physical function, self-esteem, public distress, and work before and after the lockdown

	Never		Sometimes		Always		p
	Before Lockdown	After Lockdown	Before Lockdown	After Lockdown	Before Lockdown	After Lockdown	
Physical Function							
Because of my weight, I have trouble climbing stairs/running	114	106	38	44	5	7	0.033
I am troubled by painful or stiff joints	105	92	50	60	2	5	0.002
Self-esteem							
Because of my weight, I am afraid of being rejected	116	108	28	29	13	20	0.04
Because of my weight, I avoid looking in mirrors or seeing myself in photographs	118	110	35	39	4	8	0.033
Work							
Because of my weight, I have trouble getting things accomplished or meeting my responsibilities	137	132	17	18	3	7	0.020
Public distress							
Because of my weight, I experience ridicule, teasing or unwanted attention	103	96	38	43	16	18	0.07

DISCUSSION

This cross-sectional study shows the association between weight-based quality of life and lockdown during the Covid-19 pandemic in Pakistan. The quality of life has worsened in the lockdown, owing to lack of physical activity, increased anxiety, poor dietary habits, and lack of peer interactions.¹⁵ Overeating and poor exercise led to socially unacceptable raised body weight leading to a rise in mental health issues.¹⁶ In Pakistan, these issues were not very well addressed. Though there was inauguration of the telemedicine concept, but due to rural-urban disparity, it failed to address these problems.¹⁷

Low physical activity and lipid deposition in various systems of the body lead to cardiovascular disease, diabetes mellitus, and dyslipidaemia. There is an increase in cytokines release and angiotensin which causes hypertension.¹⁸ There is an increased risk of breast cancer, endometrial cancer, and other cancers.¹⁹⁻²¹ It can also affect the immune responses of the body, making it vulnerable to infections and less responsive to vaccinations, anti-virals, and antimicrobial therapies.²² High BMI can lead to increased levels of inflammatory mediators like TNF, IL-1, IL-6, resulting in osteoarthritis.²³ The problem of osteoarthritis linked with obesity is more commonly seen in women, affecting the larger stabilizing joints mostly like knee, back, and hip, that is important in performing physical activities like climbing stairs.²⁴ This is homogenous to our findings; a significant number of individuals report trouble with stiff joints after lockdown. People were discouraged to visit their doctor because of ongoing pandemic and routine medical check-ups were ignored. This may lead to health issues in future.

The pandemic had a considerable number of negative effects on the mental health of people. Etxebarria *et al*²⁵ reported higher levels of stress, depression, and anxiety after the lockdown in Spain. Depression, anxiety, and stress after lockdown order has also been prevalent in the Indian population with recommendations for urgent intervention from the government.²⁶ The mental health of the Pakistani population has taken a toll downwards as 16 cases of suicide linked to COVID-19 were reported with the most common cause being economic recession and distress followed by fear of infection.²⁷ More people feared social rejection after lockdown than before lockdown. This led them to avoid looking at themselves in mirrors, i.e., self-avoidance. Other contributory factors include peer victimization, unwanted teasing, and societal pressure.²⁸ These have also been obvious in the present study.

The limitations of our study include the questionnaires being sent online. There might be a chance that these were not responded by the individuals

themselves which may lead to ambiguous results. A proper identification procedure must have been added to avoid such discrepancies. People who might have been the worst affected in terms of weight-related quality of life might not have come forward to fill the survey due to shyness or embarrassment of social stigma. In future studies, a broader spectrum of age groups and a larger sample size should be used to get an accurate idea about how the quality of life altered within individuals, and if possible, the health-related quality of life should be measured to find the future impact of this pandemic on healthcare needs.

CONCLUSION

The COVID-19 pandemic has brought out a lot of problems which not only include unemployment, poverty, mental health problems like anxiety and depression, but also debilitated quality of life and physical health. The community-wide quarantine during the COVID-19 pandemic is causing weight gain and hence lower quality of life in young adults. Young adults have problems with day-to-day physical activities like climbing stairs, and complain of stiff joints. Self-esteem has been adversely impacted. Meeting one's responsibilities has also become difficult which can be attributed to both declining physical health as well as mental health. There is an utmost necessity of finding ways to improve the quality of life in individuals which may block the rise of other associated problems like obesity, depression. Otherwise, we may be heading towards lowered overall quality of health in young people.

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