



Changes in Lifestyle, Health Practices, and Perceived Anxiety amidst the COVID-19 Pandemic: A Cross-Sectional Study Conducted on the General Population of Pakistan

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Abstract

Background: The emergence of the coronavirus disease 2019 (COVID-19) pandemic has created unprecedented challenges across the globe. In addition to its debilitating impacts on health, the pandemic has also resulted in sudden changes in the quality of life. Our study aims to assess and highlight the alterations in lifestyle, health practices, and perceived anxiety in amongst the Pakistani denizens during the categorical lockdown across the country.

Methods: A cross-sectional study was conducted during April 2020 through an online self-administered questionnaire using the snowball sampling technique. The online survey included a diversified set of questions ranging from the demographics, participants' sleeping routine, physical activity, hygiene habits, daily routine, and dietary habits during the quarantine period. It also assessed their anxiety through a series of questions, stretching from their own apprehension of their mental health to their assumption regarding the uncertainty of the future. SPSS v23 was used for data analysis, and chi-square test was applied.

Results: A total of 384 respondents were included in the study. The mean age of the participants was 21.26 ± 4.267 years. It was observed that 203 (52.9%) individuals spent most of their time in self-isolation on social media, and 167 (43.5%) of participants claimed to be undertaking online classes or watching television. Furthermore, half of the participants noted that their sleep duration had increased 194 (50.5%), along with increased levels of perceived anxiety 242 (63%).

Conclusion: The imposed nationwide lockdown due to COVID-19 has extensively affected the daily routine of the people living in Pakistan, eliciting profound changes in their sleeping patterns, dietary habits, mental health, and physical activity. Therefore, addressing the issues that arise amidst the lockdown remains pivotal.

Keywords: COVID-19, Anxiety, Lifestyle, Public Health Practices

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Introduction

The world has witnessed an unpredictable time since the emergence of the coronavirus disease 2019 (COVID-19).

COVID-19 emerged in Wuhan, China, where initially it was declared an epidemic, but through transmission,

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↑What is “already known” in this topic:

It was known that the COVID-19 has significantly affected the lives of people globally. Several international studies have been published highlighting the increasing mental health concerns, change in the daily routine and lifestyle of people during the pandemic.

→What this article adds:

Our article assesses the impact of COVID-19 on the people of Pakistan. This article shows how the lifestyle, dietary habits, daily routine changed with the pandemic. It also highlights that the mental health concerns are increasing even in the general population of Pakistan. It raises an alarm for the Government of Pakistan to take prompt actions against the highlighted issues.

COVID-19 spread throughout the world and was soon declared a pandemic on 12th march 2020 (1). Today, millions of people remain confined within their homes under shelter-in-place (1, 2).

The new infectious ailment has disrupted the lives of millions of people along with their mental states. Furthermore, the lockdowns and safety measures put in place by the government of Pakistan have led to a bigger impact on the psychological state of the general population (3).

With this new pandemic, terms like 'social distancing' and 'self-quarantine' were introduced as they appear to be the only solution right now to stay safe. However, efforts are being made by every country to contain the virus, and the government of Pakistan also imposed a nationwide lockdown (4). Currently, people are self-quarantined and observing social distancing, but this practice has altogether changed the lifestyle of the general public.

This new form of quarantined lifestyle demands many adjustments and preventive measures. This study aims to determine the difficulties that Pakistanis are facing with this new manner of living. Copious research is being carried out regarding COVID-19 in every corner of the world, but not much of it has been to highlight the lifestyle changes and mental health of the general public of Pakistan. Therefore, we attempted to assess the various lifestyle modifications and health practices that the general public has been forced to adopt during this phase of the lockdown.

Methods

Participants and Procedure

A cross-sectional study was conducted. The study was conducted with its participants residing in different cities of Pakistan and was carried out from 7th April till 24th April 2020. The resulting figures were collected from the participants using a snowball sampling technique and by utilizing a 'select statistical calculator' in order to determine the required sample size. Prior to proper data collection, pilot testing was done among 30 participants reliability of the questionnaire. The expert team did the assessment of data to check for any ambiguity and complexity in the questionnaire. A sample size of 384 was calculated, which represented a population of 100,000 individuals with a confidence level of 95%, a flexible error margin of 5%, and a response distribution of 50%. The calculator makes use of the formula:

$$n = N * X / (X + N - 1)$$

Where,

$$X = Z_{\alpha/2}^2 * \sigma^2 / MOE^2$$

And $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (e.g., for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, σ^2 is the population variance, and N is the population size.

Inclusion and Exclusion Criteria

Acknowledging the lockdown state, a questionnaire was generated in an e-form and dispensed through social media to the participants residing in different parts of Pakistan. The questionnaire was composed in the English language and was validated by senior researchers. Both male

and female participants from all age groups with some knowledge of the English language were included in this study. Those who refused to participate in the study and those who did not have internet and could not be reached via electronic means were excluded from the study.

Survey details

The online survey included a diversified set of questions ranging from the demographics, participants' sleeping routine, physical activity, hygiene habits, daily routine, and dietary habits during the quarantine period. This set of data assisted us in analyzing the immediate impact of the COVID-19 pandemic on the residents' ongoing lifestyle and health practices. The survey also inquired into the mental health state of the participants by assessing their anxiety through a series of questions, stretching from their own apprehension of their mental health, duration of their sleep, and even their assumption regarding the uncertainty of the future. The resulting information from these questionnaires was used to conclusively provide a practical assessment of the impact of quarantine on the life of the population of Pakistan.

Ethical considerations

The study was conducted in alignment with the acceptable ethical norms and guidelines, maintaining the participants' anonymity in order to preserve and protect confidentiality. All participants were fully informed about the purpose of the study, and the questionnaire was completed with the participants' consent. The institutional ethical approval of the study was not possible due to the COVID-19 lockdown in the country.

Statistical Analysis

The data was initially imported and organized in Microsoft Excel and then analyzed using the SPSS 23.0 software. Descriptive statistics were used to assess the characteristics (mean, frequency, and percentages) for all variables. A Chi-square test was employed to assess any potential statistical relationships between socio-demographic and other categorical variables. P-value was used for comparison of doctors with other than doctors (General population). A p-value of less than 0.05 was considered statistically significant.

Results

A total of 384 responses were received, out of which 75.3% were females and 24.7% were males. The mean age transpired to be 21.26 ± 4.267 . Majority of the participants were residing in Sindh (N=252, 65.6%), followed by Punjab (N=117, 30.5%). These demographics are displayed in Table 1.

With reference to the participants' compliance with quarantine, 258 (67.2%) claimed to have left their homes during the lockdown. Among these, the majority of the participants went out only 1-2 times a week (Fig. 1). Among the participants who went out, there were 204 (53%) who did so for essential reasons such as buying groceries, hospital work shifts, medical treatment, and volunteer work. However, 43 (11.2%) of the participants

Table 1. Socio-demographic characteristics of participant

Variable	Male	Female	X ² , P-Value
Age (in years)			1.892, 0.388
Less and equal to 25	86 (24)	273(76)	
More than 25	9 (36.0)	16 (64.0)	
Region			2.965, 0.550
Balochistan	02 (40.0)	03 (60.0)	
Islamabad	02 (33.3)	04 (66.7)	
Khyber Pakhtunkhwa	01 (25.0)	03 (75.0)	
Punjab	24 (20.5)	93 (79.5)	
Sindh	66 (26.2)	186 (73.8)	
Occupation			21.452, 0.03
Businessman	02 (50.0)	02 (50.0)	
Doctor	44 (19.8)	178 (80.2)	
Engineer	04 (100.0)	0 (0.0)	
Housewife	0 (0.0)	05 (100.0)	
Medical Student	05 (27.8)	13 (72.2)	
No occupation	01 (11.1)	08 (88.9)	
Other	04 (33.3)	08 (66.7)	
Student	34 (33.7)	67 (66.3)	
Teacher	01 (11.1)	08 (88.9)	
Family setup			5.724, 0.017
Joint family	42 (32.1)	89 (67.9)	
Nuclear family	53 (20.9)	200 (79.1)	
Have you left your house during this time for any reason?			16.592, <0.001
No	15 (11.9)	111 (88.1)	
Yes	80 (31.0)	178 (69.0)	

also admitted that they left their homes because they got tired of staying in for so long (Fig. 2).

One of the major reasons for our study was to assess the

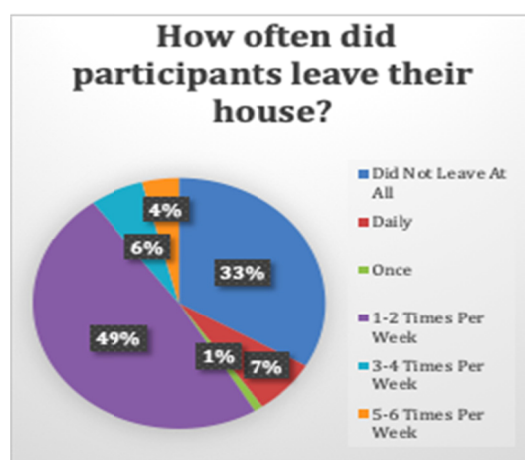


Fig. 1. Participants' compliance with quarantine

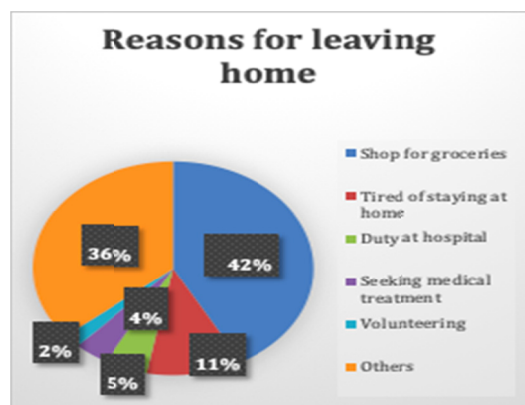


Fig. 2. Participants' compliance with quarantine

lifestyle changes of the participants during the quarantine. Concerning physical activity, 162 (42.2%) of the individuals reported that their exercise routines were indeed affected during the COVID-19 lockdown. Out of which, only 115 (29.9%) claimed to have compensated for their affected fitness routines at home. Individuals with comorbidities are at immediate risk, as a negative change to their lifestyle can exacerbate their health conditions and about 16.3% of the participants in our study were found to be co-morbid. In addition, approximately half of the participants 199 (51.8%), were assertive that they consumed a healthy diet, while 104 (27.1%) of them admitted that their diet had become unhealthier.

The survey also revealed that the majority of the participants were bored at home during the nationwide lockdown and found the internet as a useful source of spending their free time. With regards to the different types of activities that the participants have been engaged in during the quarantine period, almost half of them (n=203, 52.9%), reported frequently using social media as a means of occupying their free time (Fig. 3).

Even the slightest deviation in the daily routine can have a major impact on physical and mental health. Our resulting figures suggested that most of the participants were conscious regarding their health and washed their hands regularly at home 367 (95.6%).

According to the data provided by the respondents, 131 (34.1%) of them were residing in a joint family system. Conclusively, the survey also consisted of questions that were used to evaluate the health practicing measures taken at home by these individuals. The responses obtained from the latter revealed that the participants were not allowing visitors from outside 278 (72.4%). On the other hand, 17 (4.4%) of the participants disclosed that they were not taking any precautionary measures (Fig. 4).

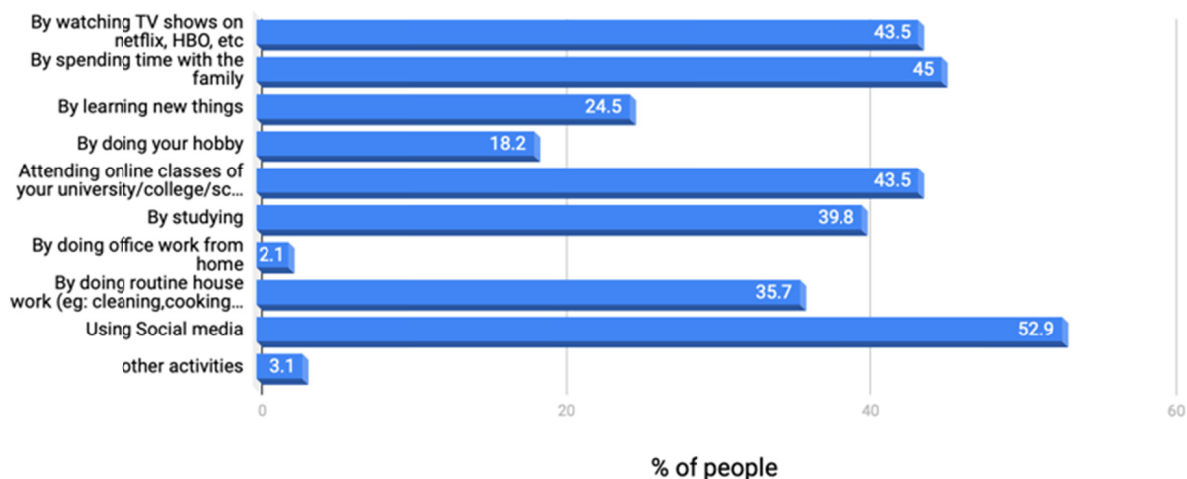


Fig. 3. Participants’ response about how they are spending time at home during the quarantine period

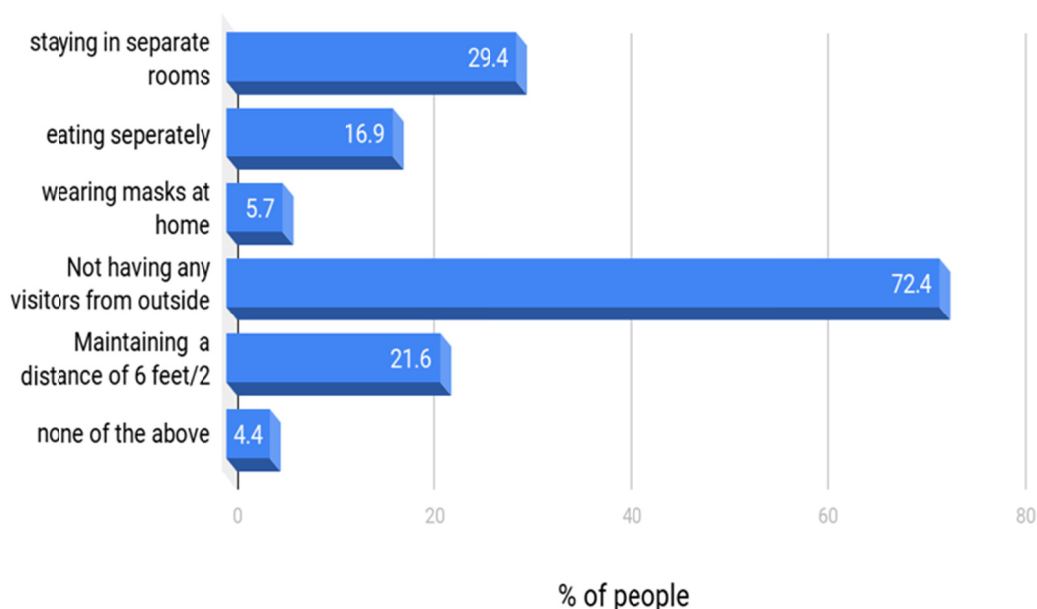


Fig. 4. Health practicing measures taken at home by the respondents

Needless to say, a variation of such magnitude in their daily lives has also had some unintended effects on the participants' sleep routines. The survey revealed that the majority of participants (n=194 , 50.5%) experienced increased sleep durations.

With reference to the responses received for the mental state-related questions, the majority of the participants (n=269, 70%) believed that mental health issues were increasing due to quarantine (Table 2). Moreover, 184 (48%) of the participants reported feeling down, depressed, and hopeless for several days during the quarantine, and 64.1% declared that they had little interest or pleasure in doing things. According to 257 (67%) of our respondents, the media had played a major role in creating fear among the people that ensued after the COVID-19 outbreak. Interestingly, 13.3% of the participants also strongly agreed that the current change in lifestyle imposed by the lockdown may have also resulted in more

domestic violence cases in Pakistan.

Discussion

The virus has continued to spread its roots around the country and has caused many fatalities in the process, resulting in a nationwide lockdown imposed by the government. These unforeseen turn of events in the lives of the population of Pakistan have resulted in substantial changes in their lifestyle, health practices, and mental health.

Our study shows that the people of Pakistan, under these circumstances, have experienced a major impact on their daily routine, including a highly affected fitness routine and increased sleep duration. While the prolonged sleep duration and improved biological sleep-wake timing can be attributed to the increased flexibility of social schedules such as working from home, the overall sleep quality has however declined. In the European study that investigated the impact of COVID-19 lockdown on sleep dura-

Table 2. Perceived anxiety and its association between doctors and other than doctors

Questions	Doctors	Other than doctors	p-value
Do you think that mental health concerns are increasing because of the quarantine and lockdown?			0.510
Yes	158 (58.7)	111 (41.3)	
No	17 (48.6)	18 (51.4)	
May be	47 (55.8)	33 (41.3)	
Do you feel you have little interest or pleasure in doing things these days?			0.413
For several days	137 (55.7)	109 (44.3)	
For whole quarantine period	39 (65.0)	21 (35.0)	
Not at all	46 (59.0)	32 (41.0)	
Are you feeling down, depressed or hopeless during these days in quarantine?			0.230
For several days	105 (57.4)	78 (42.6)	
For the whole quarantine period	41 (67.2)	20 (32.8)	
Not at all	76 (54.3)	64 (45.7)	
How many hours are you sleeping?			0.233
Less than 6 hours	02 (40.0)	03 (60.0)	
6-8 hours	93 (56.4)	72 (43.6)	
8-10 hours	81 (55.5)	65 (44.5)	
10-12 hours	41 (70.7)	17 (29.3)	
More than 12 hours	05 (50.0)	05 (50.0)	
How has your sleep been altered due to the quarantine period and lockdown?			0.344
Increased	114 (58.8)	80 (41.2)	
Reduced	45 (63.4)	26(36.6)	
Not change	63 (52.9)	56 (47.1)	
Are you feeling anxious because of the current situation?			0.004*
Yes	153 (63.2)	89 (36.8)	
No	33 (57.9)	24 (42.1)	
May be	36 (42.4)	49 (57.6)	
Do you feel uncertain about the future because of the pandemic?			0.015*
Yes	131 (64.2)	73 (35.8)	
No	53 (54.1)	45 (45.9)	
May be	38 (46.3)	44 (53.7)	

*Statistically significance ($p < 0.05$)

tion and quality, it was proposed that the decrease in sleep quality could be alleviated by increasing daylight exposure and regular exercise (5).

As evident from our study, the vast majority of individuals have resorted to a more sedentary lifestyle during the quarantine period, with most of the time being spent either watching television or on social media. Sedentary behavior and lack of physical activity have a synergistic harmful effect on cardiovascular health, with increased morbidity and global mortality (6). This is of particular concern in children and adolescents since reduced physical activity and increased screen time can result in adverse health outcomes, such as weight gain, loss of muscular and cardiorespiratory fitness, psychosocial problems, and poor academic achievements (7). Furthermore, according to a study published by Joyce Lee in April 2020, daily school routines are important for students with mental health concerns since the everyday routine provides them with coping mechanisms, and thus the loss of that can leave a disastrous impact on their mental well-being (8).

Needless to say, an excruciating calamity such as the COVID-19 outbreak brings about a cloud of chaos and anxiety among the people who are experiencing it. The participants of our study were generally healthy and were not infected by COVID-19, and yet still projected increased anxiety and stress. A study conducted to assess

the mental health status of the population in China during the COVID-19 outbreak reported that 53.8% of the respondents rated the psychological impact of the outbreak as moderate or severe, and 16.5% reported moderate to severe depressive symptoms (9). Hence, there is a crucial need for immediate and effective psychological interventions established by the health authorities in Pakistan to prevent a secondary mental health crisis and to eliminate a sense of uncertainty through accurate and regulative communication about the COVID-19 (10).

Furthermore, since the virus is associated with a high mortality rate and thus the need for more immediate health services, the frontline health workers are placed at a higher risk of contracting the virus. Consequently, they also have a higher rate of anxiety and stress compared to the general population. This was also shown in our study as over 60% of the doctors reported feeling anxious due to the pandemic, and 67.2% also stated that they felt depressed and hopeless during the quarantine period. A study on the mental health of medical workers of Pakistan during the pandemic COVID-19 outbreak mentioned that the medical workers were under severe physical and mental stress due to infection risk, insufficient safety equipment, and isolation (11). In particular, overcrowding in emergency rooms was perceived as a barrier to infection control by the majority of health care workers in Pakistan

(12). Besides, a research analysis also revealed that the prevalence rate of anxiety and depression appeared to be higher in female healthcare workers and that the nursing staff also exhibited a higher rate of anxiety and depression compared to doctors (13, 14). Therefore, it is of utmost importance that the government and policymakers establish effective strategies focusing on the barriers to infection control and encourage the facilitation of safety equipment and mental healthcare facilities to medical personnel (12). In the general population, increased anxiety during COVID-19 could be due to the impact of flying rumors among people and less awareness about the disease (15).

Moreover, healthcare authorities have been promoting the “stay home, stay safe” phrase to prevent the virus from spreading. However, for those living in unhealthy abusive relationships, there may be an increase in the frequency of domestic violence, further worsening the mental health and anxiety of the victim. A study observing the consequences of COVID-19 on domestic violence stated that the frequency of calls to Spain and Cyprus’s domestic violence helplines had increased by 20% and 30%, respectively, especially during the first week of the outbreak (13). While there is no existing data available on domestic violence cases in Pakistan in the context of COVID-19, a report published by the United Nations Office on Drugs and Crime (UNODC) Pakistan titled “Gender and Pandemic-Urgent Call for Action” stated that the associated financial uncertainties, fear of the virus, and state of lockdown may worsen the diverse form of gender-based violence, especially within a developing country like Pakistan where domestic violence has already been occurring at an alarming rate (15). Mental health professionals also report that they have seen an increase in the number of cases of domestic abuse during the COVID-19 lockdown in Pakistan (16, 17).

Suggestions

To deal with the psychological issues due to the COVID-19, the Government of Pakistan can set up a free online psychological clinic or a toll-free number that should be functional 24/7 to cater to the general population. It is also important to institute and update necessary legislation regarding women's welfare in the wake of COVID-19 to combat domestic violence. The general population should be advised through advertisements and newspapers to follow SOPs, sleep on time, exercise more and take a balanced diet. To effectively manage the diet-related issues in the COVID-19 pandemic, online nutrition should be available for free. Government should also initiate awareness programs and provide valid information to the people with the help of the latest researches, as this will help in dealing with the anxiety among people regarding rumor’s related to COVID-19. Furthermore, the government can set up free psychiatric camps for COVID 19 survivors and the close people related to them in order to maintain a healthy mental state.

Limitations

Our study had few limitations as follows: Firstly, the

snowball sampling method was used, and due to voluntary participation, there was a possibility of selection bias. Secondly, our sample size was small. Finally, our collected data consists of the participants mostly from the Sindh province, so the results of our study can’t be generalized to all regions of Pakistan.

Conclusion

Our study found that the COVID-19 pandemic, and nationwide lockdown imposed by the government, have extensively altered the daily routine of the people living in Pakistan, with a profound impact on their sleeping pattern, dietary habits, mental health, and physical activity. Therefore, to address the problems that have been highlighted, efforts should be taken in providing health education and awareness programs for the general population. The government needs to take prompt actions to minimize the negative effects of COVID-19 lockdown among people living in Pakistan.

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Conflict of Interests

The authors declare that they have no competing interests.

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