

Impact of lockdown due to COVID-19 on physical and mental health

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ABSTRACT

Background: The COVID-19 pandemic has brought into focus the mental health of various affected populations. Studies on the effects on mental health due to COVID-19 are scarce. The aim of the present study was to find the impact of lockdown due to COVID-19 on physical and mental health. **Methods:** This cross-sectional study was conducted between June and August 2020 in 310 individuals. An online questionnaire on the Google form platform, internally validated was sent through email and What's App. The primary outcome measure was to assess the impact of lockdown on physical and mental health, whereas the secondary outcome measure was to study the impact of lockdown on individuals' daily habits. A comparison of the distribution of categorical variables was done using Chi-square or Fisher's exact test. **Results:** Mental health problems and stress were increased in 42.9 % and 61.0 % of respondents. In all 61.3 % and 58.4 % reported a positive change in attitude towards life and enjoyed their activities during lockdown respectively, whereas 11.9 % of respondents lost confidence in themselves. The majority of the respondents followed preventive measures such as the use of masks, hand wash and social distancing. A higher percentage of respondents reported a positive change in attitude towards life and enjoyed their activities during lockdown who practiced Yoga and exercised regularly. **Conclusions:** Almost half of the participants had mental health problems and stress during COVID-19 lockdown. Regular exercise and Yoga may be useful for a positive change in attitude.

Keywords: COVID-19, mental health, lockdown, Yoga, exercise

A novel coronavirus first identified in a seafood market in Wuhan City, Hubei Province in China, at the end of 2019 was named as severe acute respiratory coronavirus 2 (SARS-CoV-2). (Zhu et al., 2020) SARS-CoV-2 causes contagious respiratory illness called coronavirus disease 2019 or, COVID-19. (Wu et al., 2020) World Health Organization (WHO) declared it as a pandemic on March 11th, 2020. (WHO, 2020) Until 30 October 2020, the novel coronavirus affected 218 countries, infected 45,531,607 people and killed 1,188,929 people. (Worldmeter, 2020)

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In India, a young girl who had returned to a southern state of Kerala from Wuhan was the first COVID-19 positive case detected on January 30, 2020. Cases were restricted to only three till February 2020. In March 2020, the transmission escalated all over the country, most of which were linked to travel history in affected countries. (Chaurasiya et al., 2020) On 12th March 2020, the first death was reported in India. (Mukherjee et al., 2020) Many countries-imposed curfews, quarantines, and lockdowns to restrict the spread of the infection among people. (Agoramoorthy et al., 2020) Indian government declared the pandemic as a 'notified disorder' under the Disaster Management Act, 2005 on March 14, 2020. The quarantine was imposed on Indians returning from COVID affected countries for 14 days and social distancing was implemented as a preventative measure. (Mukherjee et al., 2020) The number of cases exceeded 500 by March 24, 2020. On 24th March, 2020 a complete lockdown was put into operation for three weeks, and it was subsequently extended. (Mukherjee et al., 2020) (Sharma et al., 2020) Several measures were implemented by the Indian and state governments to overcome these hardships and people were allowed to "Work from home." (Sharma et al., 2020)

The COVID-19 pandemic has brought into focus the mental health of various affected populations. The prevalence of epidemics accentuates or creates new stressors such as panic, worry and anxiety for the individual and family members, constraints on physical movement and social activities due to quarantine, and unexpected and drastic lifestyle changes. Much of the current literature on the psychological impacts of COVID-19 has emerged from the earliest hot spots in China. Quite a few studies have assessed mental health issues during epidemics, most have focused on health workers, patients, children, and the general population. (Brooks et al., 2020) (Lai et al., 2020) (Xie et al., 2020) A study reported elevated levels of anxiety and depressive symptoms among the general population in North America and Europe. (Nelson et al., 2020) While most of the clinical and research efforts were focused to reduce the effects of the virus on physical health, (Onder et al., 2020) (Wu et al., 2020) (Fauci et al., 2020) it's short-and long-term effects on mental health are causing a second wave of the pandemic, which has been mostly ignored. (Kuzman et al.,) (Thome et al.,) (Horesh et al.,) The impact of a lockdown might vary across various social groups. (Sharma & Subramanyam, 2020)

Studies on the effects of different forms and levels of restrictions resulting from public health measures (e.g., stay-at-home orders, being quarantined, or reduction of social contacts) on mental health are scarce. Some of these studies revealed that quarantine was associated with elevated mental health problems. (Wang et al., 2011) (Liu et al., 2012) (Wu et al., 2009) (Bai et al., 2004) The aim of the present study was to find the impact of lockdown due to COVID-19 on physical and mental health.

METHODOLOGY

This cross-sectional study was conducted between June 2020 and August 2020 in 310 individuals. An approval from the scientific advisory committee and institutional ethics committee was obtained before the commencement of the study. An electronic informed consent was obtained via Google forms prior to enrolment explaining details of the study. An online questionnaire on the Google form platform, internally validated was sent through email and social media platforms like WhatsApp.

Individuals aged between 18 and 55 years of both genders were included. Individuals who were not willing to participate were excluded. Information regarding age, gender, educational status, marital status, family size, exercise, yoga practice, sleep, diet, stress,

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mental health, mobile cell use, use of media, new illness, etc. was collected by using a pre-tested questionnaire. The primary outcome measure was to assess the impact of lockdown on physical and mental health, whereas the secondary outcome measure was to study the impact of lockdown on individuals' daily habits such as physical activity, diet, use of social media, etc.

Statistical analysis

Data collected were entered in Excel 2007, and analysis of data was done using Statistical Package for Social Sciences for Windows, Version 20.0. IBM Corporation Armonk, NY, USA. The data on categorical variables are shown as n (% of cases). A comparison of the distribution of categorical variables was done using Chi-Square or Fisher's exact test. The confidence limit for significance was fixed at 95% level with a p-value < 0.05.

RESULTS

Of 310 respondents, 33 (10.6 %), 202 (65.2 %) and 75 (24.2 %) were < 30, 30 - 50 and > 50 years respectively. Of 310 respondents, 196 (63.2 %) and 114 (36.8 %) were males and females respectively. Of 310 respondents, 267 (86.1 %) and 43 (13.9 %) had higher and secondary/primary education respectively. Of 310 respondents, 233 (75.2 %), 70 (22.6 %) and 7 (2.2 %) were unmarried, married and divorced respectively. Of 310 respondents, 297 (95.8 %) were taking normal Indian food, whereas 13 took fast food frequently (4.2 %). Of 310 respondents, 123 (39.7 %) worked from home, whereas 37 (11.9 %) attended office in person. Of 310 respondents, 187 (60.3 %) reported that there was no change in sleep pattern whereas 81(26.1 %) and 42 (13.6 %) reported increased and decreased sleep pattern respectively.

Of 310 respondents, 133 (42.9 %), 176 (56.8 %), 190 (61.3 %), 181 (58.4 %) and 37 (11.9 %) reported that mental health problems increased, could not overcome difficulties, positive change in attitude towards life, enjoyed their activities during lockdown and lost confidence in themselves during lockdown respectively. Of 310 respondents, 189 (61.0 %) reported that stress was increased.

Of 310 respondents, 75 (24.2 %) had a previous disease whereas 39 (12.6 %) suffered from new illnesses. Thirty-six respondents consulted doctors in person whereas 11 consulted online/telephonically. Of 114 patients who took medicines, 45, 79 and 34 took allopathic, Ayurvedic and Homeopathic medicines respectively. Of 114 patients who took medicines, 62.0 % reported that medicines were readily available, whereas 14.8 % reported that they took over the counter medicines. Of 310 respondents, 232 (74.8 %) reported that mobile use was increased in lockdown. Of 310 respondents, 128 (41.3 %) went out of the house during the lockdown, 37 for office work, 55 for purchase of vegetables/grocery/milk, etc. and 36 for visit to doctor/hospital/pharmacy. Of 310 respondents, 125 (40.3%) reported a negative effect of electronic media, 158 (51.0 %) reported that it was disgusting to watch the media and stopped watching. Of 310 respondents, 270 (87.1 %), 264 (85.2 %) and 256 (82.6 %) followed preventive measures such as use of the mask, hand wash and social distancing respectively.

Higher percentage of females 76/114 (66.7 %) enjoyed their activities during lock down as compared to males 105/196 (53.8 %) [p-value = 0.047].

Of 267 respondents who had higher education, 174/267 (65.2 %) had a positive attitude towards life, whereas 43 respondents who had secondary/primary education 16/43 (37.2 %)

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had positive attitude (p-value = 0.001). Of 267 respondents who had higher education, 169/267 (63.3 %) had exercised, whereas of 43 respondents who had secondary/primary education 16/43 (37.2 %) had exercised during lockdown (p-value = 0.009). Higher percentage 155/233 (66.5 %) of unmarried respondents exercised as compared to 30/70 (42.9 %) married during lockdown (p-value = 0.001). Of 267 respondents who had higher education, 121 (45.3 %) had mental health problems, whereas 43 respondents who had secondary/primary education 12 (27.9 %) had mental health problems due to lockdown (p-value = 0.045). Of 267 respondents who had higher education, 169 (63.3 %) practiced Yoga, whereas 43 respondents who had secondary/primary education 16 (37.2 %) practiced Yoga during lockdown (p-value = 0.009)

Of 185 respondents who practiced Yoga, 122 (65.9 %) reported a positive change in attitude towards life, whereas 125 respondents who didn't practice Yoga 68 (54.4) reported a positive change in attitude towards life during lockdown (p-value = 0.002). Of 185 respondents who practiced Yoga, 123 (66.4 %) enjoyed their activities during lockdown, whereas 125 respondents who didn't practice Yoga 58 (46.4 %) enjoyed their activities during the lockdown (p-value = 0.005). Of 185 respondents who exercised regularly, 120 (65.9 %) reported a positive change in attitude towards life, whereas 125 respondents who didn't regularly exercise 70 (56.0) reported a positive change in attitude towards life during the lockdown (p-value = 0.006). Of 185 respondents who exercised regularly, 119 (64.3 %) enjoyed their activities during the lockdown, whereas 125 respondents who didn't regularly exercise 62 (49.6) enjoyed their activities during the lockdown (p-value = 0.002). Of 185 respondents who exercised regularly, 15 (8.1 %) lost their confidence during lockdown, whereas of 125 respondents who didn't exercise regularly 22 (17.6) lost their confidence during lockdown (p-value = 0.011).

DISCUSSION

The present study was conducted to find the impact of lockdown due to COVID-19 on physical and mental health. In the present study, mental health problems and stress were increased in 42.9 % and 61.0 % of respondents whereas, 61.3 % and 58.4 % reported a positive change in attitude towards life and enjoyed their activities during the lockdown respectively. The majority of respondents followed preventive measures such as the use of masks, hand wash and social distancing. A higher percentage of females enjoyed their activities during lockdown as compared to males. A higher percentage of respondents reported a positive change in attitude towards life and enjoyed their activities during lockdown who practiced Yoga and exercised regularly.

A study reported that 138/195 (71%) indicated increased stress and anxiety due to the COVID-19 outbreak and disruptions to sleeping patterns 168/195 (86%). (Son et al., 2020) In the present research, 123/310 (39.7 %) respondents reported disruptions to sleeping patterns. It was reported that 21% had moderate depressive symptoms and 16 % had insomnia. (Pieh et al., 2020) Another study reported that 31.1% of the sample had potential depression diagnosis, 21.2% potential anxiety disorder diagnosis. (Benke et al., 2020) A study reported that the prevalence of depressive, anxiety and insomnia symptoms was significantly higher in the UK, relative to pre-pandemic epidemiological data.(Pieh et al., 2020)

It was reported that 12.4% of respondents (N= 2,555) reported severe or extremely severe levels of depressive symptoms, 17.6% (N= 3,627) of anxiety symptoms and 41.6% (N = 8,619) reported to feel at least moderately stressed. In particular, depressive symptoms were

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moderate in 36.5% of respondents (N = 10,124) and severe or extremely severe in 12.4% (N = 2,555); anxiety symptoms were moderate in 16.7% (N = 3,469) of respondents and severe or extremely severe in 17.6% (N = 3,633); stress symptoms were at least moderate in 41.6% (N = 8,619). Moderate to severe levels of insomnia were found in 38.8% of respondents (N = 8,031). (Fiorillo et al., 2020)

It was observed that Yoga can provide the necessary tool for risk reduction, amelioration of stress and anxiety and strengthening of the immune function. (Sharma et al., 2020) The present study substantiated the above findings. In the present study, respondents who practiced regular Yoga and exercise had positive changes in attitude towards life and enjoyed their activities during the lockdown.

Limitations

Our study has strengths and weaknesses. The present study makes a significant contribution to research on the effect of COVID-19 lockdown on physical and mental health. The present study exclusively relied on self-report data which might have been subject to memory and recall-biases. We used convenience sampling in our study that limits the generalizability of the findings. We did not include participants above 55 years of age. Generalizability is also limited due to our use of an English language questionnaire, a small sample size, and choosing the online mode of administering it. However, despite the modest sample size and the sampling design, we were able to show several interesting findings with statistical confidence. We did not use psychological scales to measure anxiety and depressive symptoms. Lastly, the cross-sectional nature of the study limits our ability to make causal claims. Longitudinal studies with frequent follow-ups during the lockdown would shed light on causal processes.

CONCLUSIONS

Mental health problems and stress were increased in 42.9 % and 61.0 % of respondents. In all 61.3 % and 58.4 % reported a positive change in attitude towards life and enjoyed their activities during lockdown respectively, whereas 11.9 % of respondents lost confidence in themselves. In all, 12.6 % of respondents reported a new illness during lockdown. Mobile use was increased in 74.8 % of respondents, whereas 40.3% and 51.0 % reported the negative effect of electronic media, and it was disgusting to watch the media and stopped watching media respectively. The majority of the respondents followed preventive measures such as the use of masks, hand wash and social distancing. A higher percentage of females enjoyed their activities during lockdown as compared to males. A higher percentage of respondents reported a positive change in attitude towards life and enjoyed their activities during lockdown who practiced Yoga and exercised regularly.

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Conflict of Interest

Dr. Deepak Phalgune, Dr. Ajitkumar Mandlecha and Dr. Gous Mujawar declare that they have no conflict of interest.

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