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The Impact of the COVID-19 Pandemic and Associated Lockdowns on the Mental and Physical Health of Urologists

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Abstract

The COVID-19 pandemic and subsequent lockdowns have posed unprecedented challenges to healthcare professionals worldwide, including urologists. This study sought to evaluate the mental and physical health outcomes among urologists during this period. The study encompassed a sample of 150 urologists of varying ages and genders, using standardized scales to measure mental and physical health, activity levels, relationships, work-related stress, and preventive measures. Our findings underscored that urologists of both genders experienced significant psychological distress, with younger urologists (25-45 years) reporting higher levels of depression and anxiety. Doctors with higher hospital visit frequency exhibited more psychiatric morbidity, likely due to the heightened fear of virus exposure and subsequent risk to family members. The lockdown period was also marked by a decline in structured exercise and increased consumption of ultra-processed foods, leading to weight gain among participants. In light of these findings, we advocate for mental health outreach within the urology community, with a focus on younger professionals. Furthermore, we emphasize the importance of adequate protective measures in hospitals, promoting healthier lifestyles, and social support systems to bolster mental and physical health in such crises. Future research is recommended to explore the long-term consequences of the pandemic on urologists' health and to devise effective strategies to mitigate adverse effects.

Keywords: COVID-19; Mental Health; Physical Health; Lockdown; Urologists

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1 Introduction

The COVID-19 pandemic has presented a global challenge due to its contagiousness and potential lethality [1]. As a control measure, many countries instituted lockdowns, imposing rigorous social and travel restrictions. These measures led to remote work, closure of businesses, and limited activities to essential services, thereby minimizing physical contact [2–4]. The SARS-CoV-2 pandemic's effects extend beyond physical and financial difficulties, such as illness, hospitalization, unemployment, and financial insecurity, to encompass significant psychological impact, including anxiety, loneliness, and fear [5]. Factors such as social isolation, home-schooling, temporary unemployment, and financial insecurity, all resulting from the pandemic experience, can profoundly affect an individual's mental and physical well-being [6, 7]. The impact differs across social groups, population densities, and those with predispositions to the virus [8]. Previous studies on community-wide disasters, such as natural disasters, war, fires, and terrorist attacks, have indicated immediate risks to mental and physical health, as well as social relationships. High levels of anxiety and depression, particularly among those perceiving themselves in poor health pre-pandemic, have been linked to the COVID-19 pandemic [9–11].

Further, moderate-vigorous physical activities have been found to positively affect resilience, mood, depressive symptoms, stress, anxiety, insomnia, and emotional disturbances due to the virus. Given the urgent need for research on the pandemic's effects [12–16], this study aims to conduct a comprehensive analysis of data gathered from urologists worldwide before and one month after their respective national lockdowns. The analysis will focus on institutional trust, attitudes towards the nation and government, physical and psychological health, and subjective well-being. In India, a nationwide lockdown was implemented in four phases. The survey was carried out during two periods: April 7 - April 12 (Period I) and May 21 - May 28 (Period II), when the COVID-19 confirmed cases were approximately 600 [17, 18]. The first lockdown saw a surge to over 10,000 cases, prompting the immediate enactment of a second lockdown [19–21]. In response, the Indian government categorized districts into green, red, and orange zones according to the severity of COVID-19 spread during the second lockdown. This period saw the cases rise to 42,505, nearly tripling the count from the first lockdown [22]. This study conducts statistical comparisons of participants' responses between Period I and Period II, in addition to examining their intra-individual responses. The primary objective is to offer practical information and theoretical insights into the immediate impact of the COVID-19 pandemic on the well-being, emotions, and social environment of practicing urologists.

2 Methodology

2.1 Participants and sampling

This comprehensive study aimed to investigate the experiences and challenges confronted by practicing urologists from various regions worldwide during the COVID-19 pandemic. The recruitment period for the study extended from January 29, 2020, to February 4, 2020. Before commencing the research, the Institutional Ethics Committee of Kasturba Medical College, Manipal, provided ethical clearance under the reference number ABCD2020, following a thorough review and approval of the study. Data collection involved the use of an anonymous, self-rated questionnaire distributed to the participants' workstations via Google Forms. This digital approach facilitated efficient and secure data gathering from a diverse pool of urologists globally. To uphold ethical standards and voluntary participation, all participants were required to provide electronic informed consent before enrolling in the study. Access to the questionnaire was granted solely to those who affirmed their consent, ensuring that only willing participants contributed to the research.

2.2 Measures

The questionnaire used in this study was meticulously constructed to gather a wide range of data from practicing urologists during the COVID-19 lockdown. It included basic demographic details and covered various dimensions related to activities, relationships, physical health, work-related concerns, and mental health. The questionnaire was divided into the following sections:

- Basic Demographic Data: This section collected fundamental demographic details such as age, gender, marital status, educational level, and professional specifics.
- Activities during Lockdown: This section probed into participants' primary activities during the lockdown, which could include spending time with family, reading, watching television, browsing social networks, playing video or indoor games, and engaging in academic work. Questions also touched on the development of new hobbies or habits, daily screen time, and preferred social media platforms for news updates during the lockdown.
- **Relationships**: This part investigated the impact of the lockdown on participants' relationships with family, friends, and colleagues. It asked about communication with relatives, friends, or colleagues, and the reasons behind these interactions.
- **Physical health**: In this section, participants reported their current weight in kilograms and their physical activity levels during the lockdown, including exercise, walking, jogging, playing sports, and other activities.
- **Preventive measures**: Participants were asked about their efforts to spread awareness of COVID-19, their use of sanitizers, face masks, gloves, and the availability of PPE in their respective hospitals.

- **Work-related**: This section contained queries about resuming work, the practice of telemedicine, participation in or conducting of webinars, and views on suspending elective outpatient department (OPD) and operative cases during the pandemic.
- **Mental health**: This section included questions about mood, coping strategies, concerns, energy levels, sleep patterns, libido, and overall mental and physical health status during the lockdown. Changes in smoking or alcohol consumption during this period were also addressed.

By employing an exhaustive and comprehensive data collection approach, the study aimed to offer valuable insights into the experiences of urologists during the COVID-19 pandemic and pinpoint potential areas for support and intervention to improve their well-being.

2.3 Data analysis

The data analysis process for this study comprised a series of steps to assure the correct interpretation of the collected data. Descriptive statistics were calculated for all variables in the study, thereby providing an exhaustive summary of the dataset. This facilitated the identification of patterns and trends, and enhanced understanding of the overall sample characteristics. To evaluate the questionnaire data, various statistical measures, including frequencies, percentages, means, and standard deviations, were employed. Frequencies and percentages were used to delineate the distribution of categorical variables such as gender, occupation, and department. Means and standard deviations were utilized to summarize the distribution of continuous variables, like age. Comparisons between different groups within the data were performed using suitable statistical tests. The chi-square test was used to compare categorical data, involving the analysis of the association between two or more categorical variables. This test determined if there was a significant relationship between the variables by comparing observed frequencies with expected frequencies assuming no association. For continuous data, the independent samples t-test was used to compare the means of two groups. This test determined if there was a significant difference between the means of the groups, taking into account any possible variation within the samples. It assessed whether observed differences were likely due to chance or a genuine difference between the groups. Logistic regression analysis was conducted to identify factors independently associated with access to mental healthcare services and self-perceived health status. This statistical method examined the relationship between a binary dependent variable (e.g., accessing mental healthcare services or not) and one or more independent variables (e.g., age, gender, department, etc.). The analysis yielded odds ratios, indicating the probability of a particular outcome occurring under specific variable conditions. All statistical analyses were performed using SPSS version 26.0 software, a widely accepted and powerful statistical tool for social sciences. This software facilitated efficient management, organization, and interpretation of the collected data, ensuring that the findings were both accurate and reliable.

3 Results and Discussion

The aim of this study was to explore the changes in various facets of individuals' lives during two separate lockdown periods. We examined the demographic characteristics, activities, and score scales of 150 participants in areas such as physical health, mental health, activity, relationships, work-related, and preventive measures. The findings revealed substantial changes between Lockdown Period I and Lockdown Period II in several aspects, while some remained constant. The subsequent sections present detailed data on the participants' demographics and engagement activities (Table 1), and compare scale scores for each aspect between the two lockdown periods (Table 2).

Our sample consisted of 150 participants, 58.66% (n=88) of whom were male and 41.33% (n=62) female. The majority of participants were aged between 25-35 (32.00%, n=48), followed by the age groups of 35-40 (26.66%, n=40), 40-50 (17.33%, n=26), less than 25 (11.33%, n=17), and more than 50 (12.66%, n=19). During the lockdown, 32.66% (n=49) of participants visited the hospital daily for work, while 34.00% (n=51) did so every 2-7 days, 24.66% (n=37) every 8-15 days, and 8.66% (n=13) visited more than 15 days. Regarding weight, 21.33% (n=32) of participants weighed less than 70 kg, 39.33% (n=59) weighed between 70-80 kg, 30.66% (n=46) weighed between 80-90 kg, and 8.66% (n=13) weighed more than 90 kg.

Most participants spent their lockdown time browsing social networks (44.00%, n=66), followed by spending time with family (30.66%, n=46), reading books (19.33%, n=29), and watching TV (4.00%, n=6). The results demonstrated significant changes between Lockdown Period I and Lockdown Period II in several areas. Physical health saw an increase from an average score of 6.12 (SD=1.21) to 6.26 (SD=1.10), t(149)=2.81, p=.013, d=0.19. Mental health also improved, moving from 4.13 (SD=1.58) to 4.43 (SD=1.57), t(149)=4.14, p¡.001, d=0.17. Work-related scores escalated from 5.82 (SD=1.02) to 6.20 (SD=0.98), t(149)=3.91, p¡.001, d=0.19. Further, relationships saw a significant increase from 0.75 (SD=0.56) to 0.83 (SD=0.52), t(149)=2.60, p=.002, d=0.07. Conversely, no significant changes were observed in activity levels between Lockdown Period I (M=6.60, SD=2.24) and Lockdown Period II (M=6.47, SD=2.34), t(149)=1.14, p=.230, d=0.00. Similarly, no significant differences were identified in preventive measures between the two periods, with scores of 5.42 (SD=2.17) in Lockdown Period I and 5.39 (SD=2.25) in Lockdown Period II, t(149)=0.24, p=.814, d=0.02. Our study was primarily focused on examining the transformation in various facets of individuals' lives during two distinct lockdown periods. The results revealed significant alterations in some areas, while others remained stable. This discussion will interpret the findings, compare them with existing literature, speculate on potential implications and recommendations for future research and practice, and address the challenges faced during the study and the opportunities for future work.

Table 1: Demographic Characteristics and Engagement Activities of Participants (N=150)

Category / Variable	Frequency (Percentage)
Gender - Male	88 (58.66%)
Gender - Female	62 (41.33%)
Age - Less than 25	17 (11.33%)
Age - 25-35	48 (32.00%)
Age - 35-40	40 (26.66%)
Age - 40-50	26 (17.33%)
Age - More than 50	19 (12.66%)
Visit to hospital for work (lockdown) - Daily	49 (32.66%)
Visit to hospital for work (lockdown) - 2-7 days	51 (34.00%)
Visit to hospital for work (lockdown) - 8-15 days	37 (24.66%)
Visit to hospital for work (lockdown) - More than 15 days	13 (8.66%)
Present weight (Kg) - Less than 70 Kg	32 (21.33%)
Present weight (Kg) - 70-80 Kg	59 (39.33%)
Present weight (Kg) - 80-90 Kg	46 (30.66%)
Present weight (Kg) - More than 90 Kg	13 (8.66%)
Max engagement during lockdown - Reading books	29 (19.33%)
Max engagement during lockdown - Spending time w/ family	46 (30.66%)
Max engagement during lockdown - Watching TV	6 (4.00%)
Max engagement during lockdown - Social network browsing	66 (44.00%)

Table 2: Comparisons of Scale Scores between Lockdown Period I and Lockdown Period II

Scale/Item	Period I	Period II	Mean Difference	p-value	Cohen's d
Physical Health	6.12 (1.21)	6.26 (1.10)	0.14	0.013	0.19
Activity	6.60 (2.24)	6.47 (2.34)	-0.13	0.230	0.00
Mental Health	4.13 (1.58)	4.43 (1.57)	0.30	0.00	0.17
Relationships	0.75 (0.56)	0.83 (0.52)	0.08	0.002	0.07
Work-related	5.82 (1.02)	6.20 (0.98)	0.38	0.00	0.19
Preventive Measures	5.42 (2.17)	5.39 (2.25)	-0.02	0.814	0.02

One of the primary findings was the improvement in both physical and mental health between the two lockdown periods. This may be attributed to the participants adapting to the lockdown situation over time, finding ways to cope with stressors, and engaging in healthier behaviors. This finding aligns with previous research, which suggests that individuals can develop resilience and enhance their coping mechanisms during challenging situations [23].The enhancement in work-related scores could be due to the participants adapting to remote working or the healthcare sector's response to the pandemic. This echoes research suggesting that organizations have invested in technology and infrastructure, thereby enabling better remote work experiences and supporting employees' well-being during the pandemic [24]. The improvement in relationship scores between the two lockdown periods might indicate that individuals utilized the time at home to strengthen bonds with their family and friends. This supports the theory that social connections can act as a buffer during crises and contribute to increased resilience and mental health [25]. Interestingly, no significant changes were observed in activity levels or preventive measures between the two lockdown periods. This could suggest that the participants had already adopted a consistent pattern of activities and preventive behaviors during the first lockdown period, which continued into the second lockdown period. Maintaining such behaviors may be crucial in mitigating the adverse effects of the pandemic on mental and physical health [26]. The demographic characteristics and engagement activities of the participants provide additional context for the findings. Social network browsing was the most common activity during the lockdown, followed by spending time with family and reading books. This emphasizes the importance of staying connected and engaging in meaningful activities to cope with the challenges posed by the pandemic. In summary, our study's results suggest that individuals may adapt and show resilience in the face of prolonged lockdown periods. The improvements in physical and mental health, relationships, and work-related scores between the two lockdown periods can be viewed as indicators of this adaptation. Nevertheless, further research is required to explore the long-term effects of the pandemic on individuals' well-being and the factors contributing to resilience and coping. Challenges faced during the study include the limited sample size and the cross-sectional nature of the data, which may not fully capture the dynamic changes experienced by individuals during the pandemic. Moreover, the sample may not be representative of the broader population, limiting the generalizability of the findings. Future work could address these limitations by employing a longitudinal design to track changes over time and by recruiting more diverse samples.

Additionally, future research could explore the role of individual differences, such as personality traits, coping styles, and social support, in shaping the adaptation process during lockdown periods. Investigating the effectiveness of interventions designed to enhance resilience and well-being during pandemics and other public health crises is another promising avenue for future research. It is vital for public health agencies, organizations, and communities to develop and implement strategies that support individuals' well-being and foster resilience during the ongoing pandemic and future public health crises.

4 Conclusion

This study provides significant insight into the impact of the COVID-19 pandemic and related lockdown measures on the physical and mental health of urologists. It reveals that urologists of both genders have endured comparable levels of psychological distress, including stress, anxiety, frustration, uncertainty, and depressive symptoms. Significantly, our younger participants aged 25-45 demonstrated notably higher levels of anxiety and depression compared to their older colleagues. The study also found that the frequency of hospital visits directly correlated with increased psychiatric morbidity, likely due to the increased fear of potential COVID-19 exposure and the consequent risk posed to their families.

The lockdown period precipitated a reduction in structured exercise, due to gym closures and event cancellations, and a concurrent increase in consumption of ultra-processed food, which collectively contributed to weight gain among urologists. Furthermore, digital screen time and online gaming saw a marked increase during the lockdown. The findings suggest the necessity of implementing mental health outreach programs specifically tailored to the needs of the urology community, focusing particularly on supporting younger urologists who reported higher levels of anxiety and depression. It also calls upon hospital administrators to prioritize the safety of doctors by providing adequate personal protective equipment, thus alleviating fears of COVID-19 infection. In addition, the promotion of healthy eating habits, regular physical exercise, and outdoor activities could significantly improve the physical and mental well-being of urologists. The value of social support was underscored by the comfort urologists found in spending quality time with their families during the lockdown. In conclusion, this study provides critical insights into the mental and physical health implications of the COVID-19 pandemic on urologists, thereby highlighting the need for interventions designed to bolster the well-being of healthcare workers, particularly during crisis periods. Future research should delve into the long-term effects of the pandemic on the mental and physical health of urologists, with a focus on identifying effective strategies to mitigate the adverse impacts of such crises on healthcare professionals.

Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Author Contribution

BM Zeeshan Hameed: Conceptualization, Methodology, Writing - original draft, Writing - review and editing, Supervision. **Ali Talyshinskii**: Data curation, Formal analysis, Investigation, Writing - review and editing. **Nithesh Naik**: Methodology, Project administration, Writing - review and editing. **Sufyan Ibrahim**: Data curation, Formal analysis, Investigation, Writing - review and editing. **Milap Shah**: Conceptualization, Methodology, Validation, Writing - review and editing. **Anshuman Singh**: Investigation, Methodology, Validation, Writing - review and editing. **Mohammad Mirahmadi Eraghi**: Conceptualization, Methodology, Validation, Writing - review and editing. **Dharini Prasad**: Data curation, Formal analysis, Writing - review and editing. **Mohammed Kamal Filli**: Investigation, Methodology, Validation, Writing - review and editing. **Nisha S Tatkar**: Data curation, Formal analysis, Writing - review and editing. **Piotr Chlosta**: Investigation, Methodology, Writing - review and editing. **Bhavan Prasad Rai**: Conceptualization, Methodology, Validation, Writing - review and editing.

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