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Psychological repercussions of COVID-19 in optometry occupation

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***Abstract*---**Background: Optometry being a profession which requires a close examination of the patient, there is a very significant danger of viral transmission while using diagnostic equipment in the field. The impact on psychological health is not limited to the covid risk factors. Despite these dangers, relatively few researches have been done to truly assess how the COVID-19 second wave has affected Indian optometrists. The purpose of this study was to evaluate the COVID-19 second wave's psychological effects on Indian optometrists. Materials and Techniques in this cross-sectional study, the PHQ-9 questionnaire was used to gauge the psychological health of 203 Indian optometrists. Results: According to this study, 203 optometrists who took part in it showed signs of depression in varying degrees: 34.5 percent mild, 20.7 percent moderate, 8.4 percent moderately severe and 0.9 percent severe. Conclusions: In the conclusion, it is fairly shown that a sizable proportion of optometrists in India were mentally impacted by COVID-19 second wave.

***Keywords*---**COVID-19, PHQ-9 questionnaire, psychological impact, optometrist.

Introduction

Millions of people died from the black plague in Eurasia and Africa between 1346 and 1353, and only isolation and quarantine could bring it to an end. The COVID-2019 crisis is being prevented globally in a manner comparable to that of the black plague(1).Covid 19 is now recognised as one of the global excess mortality rates from 2020. WHO (2) issued its pandemic declaration on March 11, 2020, and Covid afterwards brought almost complete anarchy. Since the first case of covid was discovered in India in January (3), an increase in cases and a higher death rate have been predicted across the country. Although the initial wave of

Covid was proven to be less fatal, when the second wave approached, it became more lethal, making India one of the countries with the highest death tolls in the world (4). The worst-affected nations include not only India but also minor nations like Nepal and Bhutan as well as large nations like Italy and the United States. Due to longer work hours, lockdowns, and a significant decline in businesses, this epidemic is not only damaging people's physical health but is also to blame for their unstable mental health(5). Around 73.5 Lakh individuals reportedly lost their employment during the second wave of COVID-19 in India, according to a report in "the Wire"(6). A 2020 internet survey indicates that over 25% of Indians are suffering from mental illnesses as a result of the COVID pandemic(7).The healthcare sector falls under the category of the most impacted professional sector by COVID-19. In a speech made at the beginning of the WHO's 74th World Health Assembly (WHA), Director-General Tedros Adhanom Ghebreyesus stated that about 1,15,000 healthcare professionals had paid the price of service with their lives due to COVID-19(8).Due of a staffing shortfall, third-year MBBS students in India are required to begin working in hospitals (9). Israt Jahan and colleagues conducted a study that reveals this. Following the COVID incident, there were approximately 26 HCP suicides, with the majority of cases being reported from India (10). The Covid problem is upsetting for all of the healthcare professionals, including technicians, optometrists, and not only doctors and nurses.Due to the close examinations required in the field of optometry, there is a very high risk of viral transmission when using diagnostic tools and equipment. There are some situations where an optometrist has to ask the patient to remove the mask during refraction due to the increased risk of fogging in the glasses. Refraction, retinoscopy, slit lamp examination, and even indirect ophthalmoscope can only be done by getting close to the patient, which in fact increases the risk of infection. The increased work hours and decreased pay for optometrists during the pandemic(11) as well as the risk factors for covid may all have a significant impact on an optometrist's psychological health. Additionally, because of the state-wide lockdown, optometrists who operate in the retail industry or who run their own clinics must endure significant financial loss. Therefore, it is crucial that we comprehend how much COVID-19 has impacted optometrists' mental health and that we consider a solution in case the third wave occurs.

Methods

After receiving approval from the institutional ethics committee, the study was conducted using an online cross-sectional survey that was sent across different optometrists practising in India from June 18 through July 7, 2021. Google forms were used in the development of the online survey. The questionnaire was divided into five sections: the first and last were for consent; the second section contained the participant's demographic information; the third section contained information about their employment; and the fourth section contained the Patient Health Questionnaire, or PHQ-9, which was used to gauge their mental health. A link to the online survey was shared on a number of social networking sites, including LinkedIn, WhatsApp, and Messenger. The subject could easily discontinue the study at any point because informed consent was made clear at the beginning and end of the study. At every stage, participant anonymity and confidentiality were guaranteed. All optometrists employed in any area and

holding a diploma in optometry or above were eligible to participate in the study. Out of the 400 people who were asked to take part, 203 completed the questionnaire. Because English is one of the most widely spoken languages in the globe, it was used to distribute the questionnaire rather than any other regional tongues. Depression assessment: The PHQ-9 questionnaire, a self-administered survey intended to track an individual's depression, was used to evaluate the participants' levels of depression. Only primary care uses the PHQ-9 questionnaire's validation and reproducibility. The participant had to select one of four answers for each question, and they were rated as follows: not at all (0), many days (1), more than half a day (2), and virtually every day (3). (4). The participant's score was next calculated, and the participant's overall score was used to gauge their level of depressive disorder. In the range of 0–4 (No or minimum depression), 5–9 (Mild depression), 10–14 (Moderate depression), 15–19 (Moderately Severe Depression), and 20–27 (Moderately Severe Depression) (Severe Depression) Participant Consent: At the very beginning and the very conclusion of the Google Form, the participant provided their consent. Any participant who chose not to provide consent had their form not submitted and was returned to the first section.

Data Analysis

Analysis of the data was done using Microsoft Excel 2007 and the SPSS software version 28.0. The variables were represented as percentages. Descriptive statistics were used as a baseline to compare participants with depression to participants without depression, and the Chi-square test was used to examine participants. The significance threshold was established at $p<0.05$.

Results

203 optometrists completed the survey, with a mean age of 25.01 and a gender split of 58% female respondents and 42% male respondents (SD-2.37, 25.00 Median, range-20-30). Regarding the industry in which they worked, 76% were in the medical and academic fields, while 24% were in the chain and outlet stores for retail. Among them, 87 percent had jobs, while 15 percent had lost them owing to COVID. The distribution of the respondent population is shown in Table -1.

Table 1: Distribution of Respondents according to gender and employment status

Demographic Data	Participants n=203 (%)
Gender	
Male	85 (41.87%)
Female	118 (58.13%)
Sector of Work	
Clinical and Academic	156 (76.84%)
Retail	47 (23.16%)
Employment Status	
Employed	171 (87%)

Unemployed	32 (15%)

The mean PHQ-9 score was 7.2 (range-0-25, median-7). Out of the 203 participants 35.4%had no to minimal depression, 34.4% had mild depression whereas 42.3% had moderate, moderately severe or severe depression. The participants' highest degree, gender, and work sector were all taken into consideration when comparing the participants' depression scores. It was inferred that out of 156 participants with academic and clinical backgrounds, 69.23 percent had signs of depression, but 48.9 percent of the 47 participants from the retail sector did. Approximately 41.5 percent of females out of 118 were found to have mild to severe depression, whereas 49.4 percent of males out of 85 were found to have similar symptoms.In terms of the highest degree and depression, it was noted that 87.8% of participants with the highest degree—a Masters in Optometry—had some degree of depression, whereas 75% and 51.5 percent of participants with the highest degrees—a Diploma and a Bachelor's in Optometry—had some degree of depression, respectively.

Degree of Depression → n=203(%)	No to Minimal ↓ n=72(35.5%)	Mild ↓ n=70(34.5%)	Moderate ↓ n=42(20.7%)	Moderately Severe Depression ↓ n=17(8.4%)	Severe Depression ↓ n=2(0.9%)
Gender					
Male	43(59.7%)	26(37.1%)	11(26.2%)	5(29.4%)	0
Female	29(40.3%)	44(62.9%)	31(73.8%)	12(70.5%)	2(100%)
Employment Status					
Employed	60(83.3%)	54(77.1%)	40(95.2%)	15(88.2%)	2(100%)
Unemployed	12(16.7%)	16(22.9%)	2(4.8%)	2(11.8%)	0
Highest Qualification					
Diploma	15(20.8%)	34(48.6%)	9(21.4%)	2(11.8%)	0
Degree	47(65.3%)	24(34.3%)	15(35.7%)	9(52.9%)	2(100%)
Masters	10(13.9%)	12(17.1%)	18(42.9%)	6(35.3%)	0
Sector of Work					
Clinical and Academic	48(66.7%)	54(77.1%)	37(88.1%)	15(88.2%)	2(100%)
Retail	24(33.3%)	16(22.9%)	5(11.9%)	2(11.8%)	0

Table 2: Socio-Demographic Status of those with depression and the one without depression

Variables	OR (95%CI)	P-value(<0.05)
Gender		
Male (Reference)	3.14(1.73-5.7)	<0.01
Female		
Employment Status		
Employed(Reference)	0.3(0.12-0.70)	<0.01
Unemployed		
Highest Qualification		
Diploma(Reference)	0.67(0.34-1.33)	0.3
Bachelor's		
Master's	1.53(0.62-3.7)	0.4

Sector of Work		
Clinical and Academic(Reference)	0.43(0.21-0.82)	0.01
Retail		

Table 3: Logistic Regression on risk factors with depression

Table-3 shows specifically how different variables are related to the depression score found in the optometrists. In the analysis it was noted that the gender, employment status and sector of work served as a significant predictors of depression whereas qualification status served as non-significant one.

Discussion

Through this study, it was implied that, of the 203 optometrists that took part, 64.3% displayed some degree of depression: 34.5 % mild, 20.7 % moderate, 8.4 % moderately severe and 0.9 % severe. This was discovered to be significantly greater than the prevalence of depressive symptoms among healthcare professionals that was recorded during the COVID pandemic, which was 11.4 percent (12). The increase in job losses during the pandemic, the lack of PPE kits for optometrists, the second wave's higher mortality rate, the requirement that every test be performed in close proximity to the patient, and the increased risk of infection transmission are all possible causes of the high level of depression. Additionally, it was discovered that female optometrists had a higher rate of depression than male optometrists, with a ratio of 49.4 percent for men and 75.4 percent for women. This finding is in line with a study on the mental health of healthcare professionals in India, which discovered that female healthcare professionals have a higher rate of depression than male counterparts. Because of the potential risk of spreading the disease to their husband and children, female optometrists may exhibit greater signs of sadness than males. Hormones may also play a role in this tendency. During the epidemic, domestic violence against women was also reported to be more common in India, which may have been a major contributing reason to these results (13). In this study, it was also discovered—contrary to popular belief—that optometrists who lost their jobs due to the pandemic were less symptomatically unhappy than those who were still working. Perhaps the decline in the danger of infection contributed to this outcome. When it comes to having a bachelor's, master's, or diploma in optometry, it was discovered that there was no significant difference in symptoms of depression; this actually runs counter to the findings of a study on ophthalmologists, which discovered a significant difference between depression among students in training and working ophthalmologists (14).Although the COVID-19 second wave in India is almost over, there are reports that the third wave will arrive very soon (15). There is still a very high likelihood of infection and the subsequent lockdown because Covid cases are still being reported and immunisation is still in the testing phase for people under the age of 18. Given everything mentioned above, the hospital should engage with the government to enhance working conditions and increase the availability of PPE kits. At present time, mental health is a major worry that needs to be addressed as much as possible not only at work but also at home.The constant negative news on social media and TV channels, which should be addressed by the government, is the main source of distress in such circumstances. The government needs to raise

money on its own to pay all the healthcare professionals who are on call 24/7 to assist the public. It is important to organise seminars and creative web initiatives in Oder to improve the mental health situation. The medical professionals should be able to meet with psychologists for free.

Limitation

Lack of face-to-face interviews is one of the study's drawbacks because self-reporting can introduce bias into the results. Additionally, because the questionnaire was only available in English and not all optometrists are proficient in English because it is not their first language, this may have resulted in a variation in how the questions were interpreted. Age was a significant role in assessing the symptoms of depression, but because the age range of the responding participants was limited, it was not taken into account. Finally, only the PHQ-9 questionnaire tool—which is only intended for screening purposes and not for the actual diagnosis of depression—was employed for the assessment of depression.

Conclusion

In the conclusion, it is fairly shown that the COVID-19 second wave in India had a psychological impact on a sizable percentage of optometrists. In every area of work, including academia, clinics, and retail, there is a critical need for qualified psychologist and psychiatric consulting. This study also demonstrated the necessity for female optometrists' psychological needs to be given higher priority in Oder in order to assist them. The federal and state departments of health welfare need to take appropriate action and acknowledge the need for psychological well-being among optometristsand all the other health care workers.

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Conflict of interest
There are no conflicts of interests.

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