

INTRODUCTION

The new coronavirus known as COVID-19 has emerged in Wuhan in December 2019 and spread all over the world. World Health Organization has declared COVID-19 a pandemic, as the coronavirus illness has been confirmed in over 110 countries then. Further global spread happened, including our country and more than 60 million people were infected by November 2020 (1) This outbreak, as being very contagious, has brought gross changes to the community like social distancing, restriction of social activities, closure of schools, public places and even lockdown. Besides fear of the illness, those changes in way of people's daily life caused increased stress and might have caused mental health problems. Many studies revealed that stress, anxiety and depressive symptoms are increased during the pandemic in both healthcare workers and the general public (2,3).

A decrease in hospital admission rates with the onset of the pandemic has been reported in many countries in the world as well as our country particularly during the early phase of the pandemic (4,5,6). It has been suggested that fear of contagion might have contributed to avoiding going to medical services (5).

Among the transmission ways eyes have been thought to be concerning from the very beginning (7). In an early study with 30 patients of SARS-CoV-2 in China, a positive PCR test result in the tear sample was obtained in only one patient with conjunctivitis. Whereas in a study of 32 patients in Turkey, 5 were found to have positive viral RNA results from tear samples without conjunctivitis. (8). There have been further studies where revealed controversial results for eye symptoms and viral RNA in conjunctival sac swab and tear samples. Cao et al. showed that the positive rate of the virus by PCR in conjunctival samples was 3% in their meta-analysis and they mentioned that although unlikely, there is a possibility of transmission via eye (9).

Ocular transmission of SARS-Cov-2 has not been clearly shown in the studies yet. However, as current evidence suggests that the virus is transmitted through respiratory droplets and contact routes, thus conjunctival secretions and tears may constitute a risk via direct contact. Based upon the risk of spreading of the virus, eye protection like face shields or goggles are recommended by the guidelines including WHO. The Association of eye protection and lower risk of infection has been shown in several studies. (10).

Apart from the viral load in the eyes, the ophthalmological examination has a high risk of spreading the virus due to close contact with the patient. The close contact might lead to fear of being infected and anxiety in both patients and healthcare professionals.

Therefore, we aimed to determine the anxiety levels in the patients who were admitted to an Ophthalmology outpatient clinic in a tertiary hospital.

MATERIALS AND METHODS:

Sample

Participants are recruited from the patients visiting Dicle University Ophthalmology outpatient clinics between 20 July 2020 - 20 September 2020. The study was approved by the local Ethics Committee of the Dicle University (16.07.2020, No:339).

Patients over 18 years of age who are voluntary for the study are included whereas patients suffering from severe neurological disorders, severe cognitive deficits and severe mental health problems like mental retardation are excluded.

Data collection

Data were collected with a form prepared by researchers to collect sociodemographic features, fear of COVID-19 and information about following the safety measures. All patients were evaluated by the Turkish version of Hamilton Anxiety Rating Scale (HAM-A).

Hamilton Anxiety Rating Scale (11) is a questionnaire used by clinicians to rate the severity of a patient's anxiety. It consists of 14 items where each item represents a symptom on a scale from zero to four, with a total range of 0-56. A total score of ≤ 7 indicates minimal anxiety or no anxiety, < 17 mild severity, 18-24 moderate severity and, > 25 severe anxiety. The reliability and validity study of the Turkish version has been established (12).

Statistics

Data were analyzed through SPSS 22.0 (Statistical Package for the Social Sciences version Inc., Chicago, IL, USA) package software. Descriptive statistics were calculated for continuous variables and frequency for categorical variables. Distribution of the data was tested with Kolmogorov-Smirnov tests. Count data were expressed as absolute numbers and percentages (%). Measurement data were expressed as mean \pm standard deviation and analyzed with t-test, variance analysis, and correlation analysis. Statistical significance was defined as $p < .05$. The Mann-Whitney U test was used to make comparisons between the two groups because the data were found to be non-conforming to the normal distribution. Spearman's and Pearson correlation analyses were used to examining the relationship between variables according to abnormal or normal distribution of the data respectively.

RESULTS:

Two hundreds and thirty-two volunteer patients have participated in our study, nine were removed due to lack of information and 223 were included. Of the participants, 101 were female and 122 were male and the mean (standard deviation) age of the participants was $38,48 \pm 13,9$ years. Most of the sample was married or having a civil partnership. Demographic characteristics of the participants are given in Table.1 below.

More than 80% of the patients had fear of COVID-19 at various degrees when they visit the hospital (Table.2). The least fear about the new coronavirus was transmitting it to the healthcare workers.

HAM-A total score mean was found 9.28 ± 8.717 and approximately half of the patients (51.6%) had a score of higher than 6 which means clinical significance. Age, education and HAM-A rates were distributed normally. There were significant differences between the groups of gender and marital status as female and single participants had higher anxiety. No significant difference in anxiety levels was detected between the places where people live. For the employment status, ANOVA was conducted within the groups and students were found to have a significantly high score of anxiety (Table 4). We were not able to show a difference in HAM-A scores between the patients who postponed their admission because of the coronavirus and those who did not. But when we conducted Mann-Whitney test for degree of the fear of COVID-19 when visiting the hospital, due to it is a 4 item Likert scale question, we found that fear of COVID-19 was significantly higher in the group who postponed their admission ($p < 0,01$ two-tailed, $z = -5,798$).

Age, education and fear of the COVID_19 when visiting the hospital were significantly correlated with HAM-A scores (table 5).

DISCUSSION

Our study revealed that anxiety rates were high among the patients who visited our ophthalmology outpatient department. More than half of the participants, 51,6%, had scored ≥ 7 on HAM-A showing clinically significant anxiety. Studies in Turkey have shown an increased level of anxiety in general public, health care workers, Covid-19 patients and patients suffering from other medical conditions.

In a study performed in Turkish society by an online survey, Özdin and Özdin has found that 45.1% of the participants scored higher than the cut-off point for anxiety during the COVID-19 pandemic which is similar to our study. They found that anxiety levels were significantly higher among female participants and the female gender was one of the risk factors for anxiety. It has been well known that women experience a greater prevalence of anxiety disorders. Özdin and Özdin concluded that the COVID-19 outbreak might have a greater impact on women (13). Another study in our country with 2156 participants similarly revealed higher anxiety in women (14) In line with previous studies, our results demonstrated greater anxiety among females (3, 15,16, 17).

HAM-A scores yielded a noticeable difference in students among the employment groups. Student status, as well as unemployment, is found to be a risk factor for distress during the new coronavirus outbreak although our results didn't demonstrate a significant increase for the latter (16). This finding might be important to emphasize supporting youth mental health during the pandemic.

Education level was associated positively with the anxiety rates whereas age negatively. Although lower educated people are claimed to be at higher risk for the psychological impact of the pandemic Wang et al have demonstrated higher anxiety in higher education with their metanalysis(15,17,18). In a study conducted in China more mental symptoms were found in higher educated people, suggesting that education might lead to better awareness about health which in turn might increase anxiety (19). Additionally, young age has been reported to be more prone to distress during the pandemic as our results support that as well (16).

The pooled prevalence of anxiety is found at 33% in a systematic review and meta-analysis run for the mental impact of COVID-19 (15) whereas it was higher in our study. However, in another systematic review rates of anxiety were reported between 6.33 to 50.9% in the general population (16). Regarding those review studies, the anxiety levels of our sample seem slightly higher than or at least at the upper limits of the general population. Thus we can suggest that visiting an eye clinic might be related to high levels of anxiety in these patients. This suggestion can be supported by the findings that total anxiety was significantly related to the fear of COVID-19 when visiting the hospital and postponing the hospital admission. However, opposite of what we expected, eye examination itself should be interpreted cautiously for an impact on anxiety, since we asked the participants whether they think that coronavirus can be transmitted via eyes and there was no significant difference in anxiety rates between those who believe it can and who doesn't.

There are also studies in other medical departments searching anxiety during the new coronavirus outbreak. Temiz et al. demonstrated higher anxiety scores in HAM-A in the patient group applied to a cosmetology clinic compared with the control group (20). Another study has shown that 36% of the patients had anxiety in outpatients suffering from lymphoma, mentioning the fact that women and younger patients are at greater risk (21). In a study performed in Thailand with 200 participants recruited from the patients visiting general medicine, radiology and ophthalmology outpatient units,

ninety percent had anxiety related to the COVID, but they didn't provide specific results for ophthalmology patients (22). Doglietto et. al. have searched anxiety in patients undergoing nonurgent neurosurgery and found that thirty percent of the patients have state anxiety with a strong relation to worry about COVID-19 positivity (23). In Japan, outpatients with rheumatoid arthritis have been enrolled to detect anxiety and depression levels before and during the COVID-19 and the results demonstrated increased anxiety among the patients (24). Broadly in line with our study, high level of anxiety especially among women has been found in patients visiting an endodontic clinic. In this study, great majority of the patients stated that they would not visit the clinic apart from emergency conditions during the pandemic (25). Since dental examination requires close contact similar to that of eye, we argue that this finding is important to emphasize that patients might prefer to go to hospital only for urgent cases or postpone their routine control visits as many people in our sample did.

Overall those studies, as well as ours, carried out in non-COVID departments clearly illustrate the mental impact of the new outbreak in many medical services. A noticeable decline in hospital admission rates has been reported in many countries, even for the emergency cases like coronary and stroke patients (5,6,26,27,28). It can be claimed that coronavirus fear and anxiety plays a key role in avoiding or cancelling hospital admissions. That is supported by our findings that the degree of the fear of COVID-19 was higher in those who delayed their hospital visit and also it was positively correlated with the anxiety levels. We can conclude that fear and anxiety due to pandemics might have important effects on health service utilisations, which might lead to delay and difficulty to receive treatment.

CONCLUSIONS:

We found high anxiety levels in outpatients who visited our ophthalmology clinic. This is the first study investigating mental impact specifically on an eye clinic, which clearly supports the previous studies. Because concern and anxiety due to new coronavirus outbreak might lead people to avoid health services, the public should be informed and encouraged about seeking medical advice on time during the pandemic. The mental impact of the outbreak should be treated as a public health issue and supports should be considered especially for vulnerable groups like women and young age.