The Effect of Wearing Masks on Social Interaction between King Abdulaziz University Students

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Abstract

Background: The COVID-19 pandemic has significantly altered how humans behave, including the widespread adoption of face masks as a public health measure. Using face masks as a protective measure against COVID-19 introduces a new factor in social interactions. Moreover, masks create a physical barrier that may help individuals feel more protected and less exposed in social situations, further mitigating social anxiety symptoms and increasing comfort.

Objectives: To determine the prevalence and degree of social anxiety of university-going students who wear masks compared to those who do not by administering a social interaction anxiety scale survey (SIAS).

Methods: This cross-sectional study was conducted at King Abdulaziz University, Jeddah. The study included 154 male and female participants 17-27 years of age who were undergraduate health and medical students at King Abdulaziz University. Data was analyzed using SPSS version 23.

Results: Out of 154 participants with face masks, 61.6% (n= 95) participants had a score less than 36, meaning they don't have social anxiety, whereas 38.2% (n=59) participants had a score of 36 and higher, meaning they had social anxiety. Out of 154 participants without face masks, 54.5% (n=84) participants had a score less than 36, meaning they don't have social anxiety, whereas 45.4% (n=70) participants had a score of 36 and higher,

means they had social anxiety. Non-significant association (p>0.05) was found between participants who wear face masks and who don't wear face masks.

Conclusion: The study concluded that most participants who wear face masks and those who don't wear face masks had a lower score on the SIAS scale, meaning they don't have social anxiety. No statistically significant effects have been observed between social anxiety and wearing of face mask.

Keywords: Anxiety, Face mask, Social Interaction, SIAS.

Introduction

The widespread use of face masks has recently become an integral part of daily life due to the global COVID-19 pandemic. The implementation of mask-wearing mandates has been crucial in curbing the transmission of the virus, protecting individuals from potential infection, and ultimately reducing the burden on healthcare systems. ¹ However, the impact of wearing masks extends beyond its primary function of preventing the spread of the virus. It has raised concerns regarding its potential influence on social interaction, particularly among specific populations, such as medical students. ²

The COVID-19 pandemic and the consequent social isolation have profoundly impacted social connections. ^{3, 4} People's capacity to interact, exchange feelings, and form social relationships may have been hampered by physical isolation, quarantines, and wearing masks that hide their faces. The COVID-19 pandemic has significantly altered how humans behave, including the widespread adoption of face masks as a public health measure. Face masks have played a crucial role in mitigating the spread of the virus, preventing possible infection for the wearer and those nearby. Governments and health organizations worldwide have recommended using face masks in public spaces. ⁵ In this situation, it is essential to examine the effects of face masks on different aspects of human behavior and experience, including their impact on social anxiety among university students. Social anxiety is characterized by a persistent fear of social situations and interactions, often leading to impaired functioning and significant distress in daily life. ⁶ People with social anxiety may experience excessive self-consciousness, fear of negative evaluation, and difficulty forming and maintaining interpersonal relationships.

Using face masks as a protective measure against COVID-19 introduces a new factor in social interactions. Masks cover a significant portion of the face, obscuring facial expressions and limiting the visual cues available during social encounters. The reduced facial visibility may provide a sense of anonymity, potentially alleviating feelings of self-consciousness and vulnerability in individuals with social anxiety. ⁷ Moreover, masks create a physical barrier that may help individuals feel more protected and less exposed in social situations, further mitigating social anxiety symptoms and increasing comfort. Research on the psychological effects of wearing masks has often focused on the negative aspects, such as increased feelings of isolation, communication difficulties, and reduced interpersonal connectedness. ⁸

Furthermore, the COVID-19 pandemic has introduced additional stressors to university students, such as remote learning, reduced social contact, and uncertainty about the future. Medical students, in particular, experience unique challenges and stressors during their training, including rigorous academic demands, long hours, and high levels of responsibility. These stressors and the recent addition of face masks as a necessary safety measure may affect their social interactions. Understanding the effects of wearing masks on social interaction among medical students is essential for several reasons.⁹

Despite the growing importance of understanding the impact of mask-wearing on social interaction among medical students, empirical research on this specific population remains limited. Existing studies predominantly focus on the general population or specific healthcare professionals, with minimal attention given to medical students. While studies have shown the association of masks on student life, no literature has focused on medical students from KSA. By exploring this topic, the study aims to address this research gap by investigating the effect of wearing masks on social interaction among medical students. This study aims to determine the prevalence and degree of social anxiety of university-going students who wear masks compared to those who do not by administering a social interaction anxiety scale survey (SIAS). It remains unclear how wearing masks, whether due to imposition or choice, affects the social health of these medical students and whether this translates to poor outcomes in other aspects of their lives. Understanding the implications of mask-wearing on social interaction among medical students will benefit the students and have a broader impact on medical education, patient care, and the overall healthcare system. The results from this research can be used to inform the administration of colleges/universities and educational-related authorities in the government about whether enforcing policies on wearing masks can be counter-productive to the health of their students.

METHODS

Design

Observational - Cross-sectional: Survey

Participants

This cross-sectional study was conducted at King Abdulaziz University, Jeddah, during the education year 2022-2023. The study included male and female participants 17-27 years of age who were undergraduate health and medical students at King Abdulaziz University. 154 participants completed the questionnaire.

Tools/Questionnaire

SIAS tool was used to measure the social anxiety levels in students. This tool has 20 questions. Each question has a scale from 0 to 4, where 0 means not at all, 1 means slightly, 2 means moderately, 3 means very and 4 means extremely. The possible score ranges from 0-80. Higher scores are associated with higher social anxiety levels. A score of 36 or higher suggests a possible diagnosis of social anxiety levels.

Procedure

Ethical approval for the study was obtained from the Ethical Committee of King Abdulaziz University. This survey was voluntary, and all answers were kept strictly confidential. An online questionnaire was developed utilizing Google Forms and published on social media platforms. The first page included an informed consent form that participants had read and agreed to. The 20-point survey will be uploaded online, and links will be shared with the medical students; there will be no time limit for completing the questionnaire. After completion, these would be collected, and data would be exported into Excel spreadsheet software. This would then be imported into the SPSS program for running statistical tests.

Data Analysis

Data was entered and analyzed through SPSS version 23. First of all normality of the data was checked so that the tests could be decided. Descriptive statistics was applied, and an independent-sample-t-test was used to compare the means.

Results

Descriptive Statistics

Demographics

Of 154 participants, 32.8% (n=101) were males, and 17.2% (n=53) were females. The Mean \pm SD of the age of participants was 20.9 \pm 2.16. **Figure 1** shows the age of the participants. **Figure 2** shows the college/department of participants.

Normality of data

Shapiro-Wilk test was used for testing the normality of data. Data was normally distributed (p>0.000); therefore, we applied an independent sample-t-test to compare the means between two unrelated groups.

Independent sample-t-test

Out of 154 participants with face masks, 61.6% (n= 95) participants had a score less than 36, meaning they don't have social anxiety, whereas 38.2% (n=59) participants had a score of 36 and higher, meaning they had social anxiety. Out of 154 participants without face masks, 54.5% (n=84) participants had a score less than 36, meaning they don't have social anxiety, whereas 45.4% (n=70) participants had a score of 36 and higher, meaning they had social anxiety.

This study found that participants with face mask had statistically non-significant lower social anxiety levels (31.08 ± 17.32) compared to participants without face mask (33.57 ± 12.87), p = 0.154 Table 1.



Figures



Figure 2: College of Participants

Tables

Mask	Mean	Std. Deviation	p-value
With mask	31.0844	17.32313	
Without mask	33.5714	12.87286	0.154

Table 1: Independent sample-t-test

Discussion

The present study aimed to investigate the effects of wearing a mask on social interaction among medical students to determine the prevalence of their social anxiety. Out of 154 participants using facemasks, 61.6 % didn't represent social anxiety, whereas 38.2 % had social anxiety. Among the participants not using facemasks, 54.5 % didn't have social anxiety, whereas 45.4 % had social anxiety. The results of the present study suggested that participants with masks and without masks didn't reveal any statistically significant difference with a p-value of 0.154. A study by Xiao et al. (2020) reported that out of 933 students, 96.2 % (n=898) weak masks while going out. In addition, the anxiety and depression observed among the population are 17.1 % and 25.3 %. The findings of the previous study are consistent with the current study that no association has been observed between the participants who wore masks and those who didn't. The study, however, reported that social interaction may interfere with the anxiety and depression levels of the participants due to the isolation associated with the pandemic. ¹⁰

In our present study, the association has been observed between social anxiety and wearing masks; however, no statistically significant effects have been observed. A previous study by Guo et al. (2021) reported the same findings and suggested that anxiety was observed in all the participants, whether they wore masks or not. Among 852 participants recruited in the study, 66.1 % of participants had experienced either mild, moderate or severe depression and anxiety. Their stress level was measured using a perceived stress scale (PSS); their score was 7.25/16. The study also reported that students already suffering from psychological distress have a high level of anxiety and depression during the COVID period compared to normal students. However, no statistically significant difference was observed between the participants' findings, whether wearing a mask or not. ¹¹

The present study suggested that due to increase level of COVID within the country, wearing a mask has become a common trend among university students, especially medical students. In the present study, 61.6 % of participants wearing masks and 54.5 % of participants not wearing masks had anxiety. A previous study by Khasawneh et al. (2020) reported the precautionary measures, attributes and knowledge of COVID-19 in medical students. The study reported that 19.3 % of the students consider masks necessary as a precautionary measure 60.6 % of the students believe that only COVID-infected patients should wear masks to avoid its spread. However, owing to the situation, wearing a mask was necessary in universities to prevent the spreading of infections among students. This necessity has led to the development of depression and anxiety among different students. The study reported that among participants from six different medical universities, 53 % of them reported anxiety through wearing a mask. In contrast, the remaining participants didn't believe in having any association between wearing a mask and anxiety. ¹² The results of the previous study are inconsistent with the present study, which states that statistically insignificant differences have been observed between participants wearing or not wearing a mask.

Shashina et al. (2021) conducted a study to reflect upon medical students' use of respiratory protection devices during the COVID pandemic. A total of 988 participants were recruited in the study and reflected upon the type of mask they had used; 97.5% participants had used RPE, 89.1 % used disposable masks, 27.4 % used reusable masks, and 13.2 % participants had used respirators. The study reported that most (75.2 %) participants had used masks correctly, whereas others (17.0 %) had only covered their mouths. The study also reported that the depression and anxiety levels of participants had been observed. It has been recorded that due to isolation

during the peak COVID period and increased use of masks every day during university, students become anxious and depressed. However, their level of depression has not been associated with wearing a mask; rather, it is directly associated with isolation. ¹³ This study's findings directly support the current study's findings that the participants with masks are equally anxious and depressed as participants without masks.

The results of this study suggest that wearing face masks may not significantly affect social anxiety levels among university students. This finding is consistent with previous research that has examined the potential effects of wearing face masks on various aspects of human comfort and confidence, including social anxiety. Some studies have suggested that masks may create a sense of anonymity and protection, potentially alleviating social anxiety symptoms in some individuals. For example, a study published in the Journal of General Psychology found that participants who wore a mask in a social interaction reported less anxiety and greater comfort compared to those who did not wear a mask.¹⁴

Two studies conducted by Ljubas (2022) and Soltan et al. (2020) also reported on anxiety, depression, knowledge and risk prevention among medical students. Ljubas (2022) involved 605 participants and reported that social distancing has negatively influenced the behaviour of the individuals (p=0.06). The study further reported that participants were anxious about using preventive measures such as wearing masks (p=0.0036), increasing depression among them. Students sometimes need to violate wearing masks, especially during socialization. This study reported depression in participants wearing masks.¹⁵ Soltan et al. (2020), on the other hand, recruited 283 participants to reflect on the perception of participants on COVID. 86% of participants believed that COVID-19 is a serious threat to society, and 76% believed that ward rotations might increase the risk of infection, so the mask is essential in this case. 92 % of the participants either voluntarily or involuntarily took precautionary measures. This study somehow reported that anxiety is associated with using masks; however, medical students not wearing masks also had anxiety due to several other reasons, such as distancing from their loved ones, family members and friends.¹⁶ The findings of both studies are consistent with the suggestions of the current study, i.e., wearing a mask may increase the risk of developing depression and anxiety among medical students. However, the rate of anxiety between mask users and non-users is the same without any statistically significant differences between them.

With reference to the current and previous literature, it has been observed that COVID-19 has caused an increase in the utilization of precautionary measures for preventing the spread of infections. Especially in medical students, due to ward rotations, they have a high risk of developing contagious viruses, which could spread rapidly among the patients and other students. Anxiety and depression have been considered significant factors in applying preventive measures. The literature discussed above has significantly reflected upon the correlation between anxiety, depression and mask use. The current study has reflected that 38.2 % of the participants wearing masks have social anxiety, whereas 45% of the participants without masks have social anxiety. No statistically significant correlation has been observed between mask use and anxiety. Other studies support the current study's findings except for one study ¹⁵, which has suggested that masks can increase the risk of depression and anxiety among medical students due to not having the authority to socialize freely without a mask. Other studies have reported no significant correlation and suggested that using masks is not responsible for causing depression.

Furthermore, the study's findings highlight the importance of considering individual differences in social anxiety and the potential impact of masks on social interactions. While some participants reported a positive effect on their social interaction while wearing a mask, others may have experienced increased discomfort or anxiety due to the reduced facial visibility and communication difficulties that masks can create.

The primary strengths of this study include employing a reliable and validated instrument, namely the Social Interaction Anxiety Scale (SIAS), which boasts high internal consistency due to its rho-equivalent reliability. Moreover, the scale demonstrates robust validity, as evidenced by its correlation with other measures like the Social Phobia Scale (SPS). Uniquely, this investigation is the first globally to examine the impact of wearing face masks on social interaction anxiety experienced by the individual donning the mask. Prior research predominantly focused on the effects between individuals in other domains, particularly communication. Lastly,

another notable strength of this study is the administration of the Social Interaction Anxiety Scale on two separate occasions — once as a baseline and again while participants wore face masks.

Conclusion

Through an in-depth exploration of the effect of wearing masks on social interaction among medical students, this thesis has contributed to the existing body of knowledge in this important area. The study concluded that most participants who wear face masks and those who don't wear face masks had a lower score on the SIAS scale, meaning they don't have social anxiety. This study's findings indicate no significant impact of wearing masks on anxiety levels among medical students.

Limitations

Our research faced several limitations. Firstly, the online questionnaire administration prevented us from helping the participants clarify their scale questions. Secondly, the sample size was small, with only 154 participants, Mostly because of the time limitations, the limited sample size (only King Abdulaziz University), and the length of the questionnaire, as it consists of 43 questions which decreased the response. Moreover, overrepresenting male participants (65.4%) may have led to a non-representative sample. Our recommendation is to increase the sample size as much as possible, especially between university students, conduct face-to-face interviews to ensure high understanding and efficiency, and use short interaction anxiety scales to increase the response.

Future Recommendations

Further investigations can concentrate on identifying distinct factors that offer protection or pose risks, as well as precautionary measures that could be attributed to variations in stress and anxiety levels. Subsequent studies might gather data at multiple intervals to compare fluctuations in stress and anxiety. Moreover, given that the present research encompasses only a limited sample of undergraduate medical students, further investigations with larger cohorts are necessary to understand better how face masks impact social anxiety among students nationwide. Future research endeavours could also prioritize enhancing participation rates within individual medical schools to ensure that the data is more representative of their student population. It is important to note that the participants in this study are exclusively medical students from one university. Hence caution must be exercised in generalizing the findings and drawing broader conclusions for other populations

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