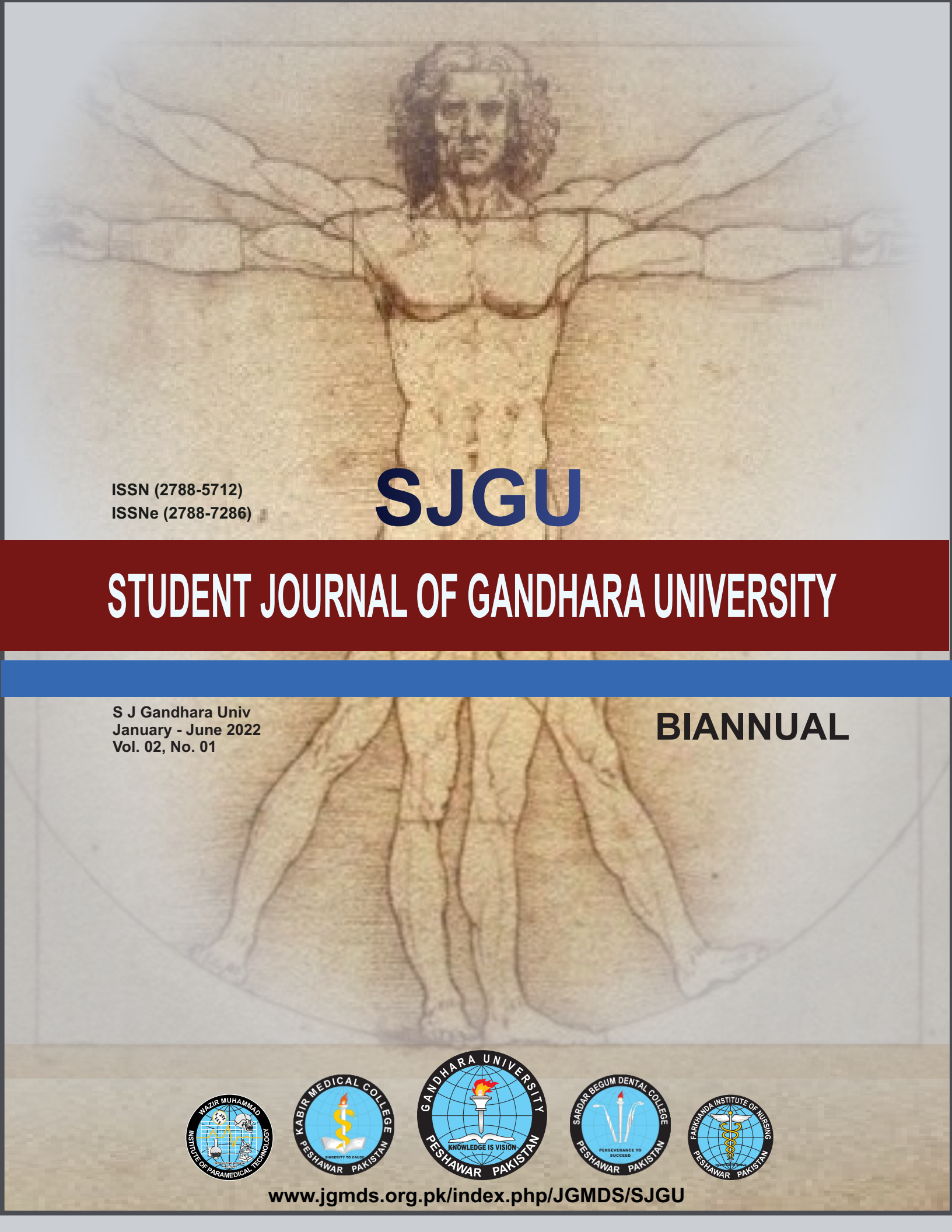

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## EDITORIAL



## ORIGINAL ARTICLES

# MENTAL HEALTH AND WELL -BEING OF HEALTHCARE WORKERS

Malika Malik
House Officer
Sardar Begum Dental College, Peshawar

"Good mental health is absolutely fundamental to overall health and well-being" ~Tedros Adhanom Ghebreyesus.

Healthcare workers are under extreme pressure every day, and the recent COVID-19 pandemic has exacerbated this issue. The evolution of the corona-virus disease pandemic in late 2019 had a miraculous impact on healthcare workers' mental health and well-being. In these challenging circumstances of the pandemic, the mental health and courage of the healthcare workers cannot be ignored. In recent years, mental health has become a significant concern as healthcare professionals are exposed to multiple stress factors, resulting in psychological distress that can lead to burnout, depression, anxiety, and sleeping disorders, influencing their physical, mental, and emotional well-being. Work-related stress can also negatively impact health care providers' professionalism, quality of care delivery, efficiency, and overall quality of life. Working in a challenging environment for a more extended period can be a risk factor for burnout.[1] Also, in many underdeveloped countries, the ratio between healthcare workers and the overall population is a significant work burden and stress issue. Studies have shown higher levels of anxiety (13.0% versus 8.5%) and depression (12.2% versus 09.5%) in healthcare professionals.[2] A recent systematic review and meta-analysis conducted by Li et al. involving 97,333 healthcare workers in 21 countries have identified a high prevalence of moderate depression (21.7%), anxiety (22.1%), and PTSD (21.5%) among healthcare workers during the COVID-19 pandemic. Most healthcare workers are trained to put the patient first. Practicing self-care is essential for all health workers, especially in times of difficulty, uncertainty and high demand. This can be done by regular assessing and monitoring the individual's level of emotion and level of stress, taking breaks whenever possible, practicing healthy daily routines such as eating a healthy diet, exercising, going for a walk, getting enough sleep and letting go of emotions that might help health professionals to find a better balance between their work and leisure time. Health care workers across the health and mental health sector should receive first aid and long-term support with accessible mental health support programs during challenging conditions. Mental health and well-being should not be protected only during a public health crisis but also on a day-to-day basis. World leaders and other decision-makers need to fully realize the crucial importance and value of investing in the mental health and well-being of the healthcare workforce on the individual, organizational, and societal level.[1]

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# A PATTERN OF REFRACTIVE ERRORS WITH INCREASED USE OF ELECTRONIC DEVICES

Waleed Ahmad[1], Ahsan Alvi[2], Abdur Rauf[3], Hamad Khan[4], Syed Hassan Shah[5], Ikram Ullah[6]


## ABSTRACT

### OBJECTIVES

*To study the effect of screen time and electronic devices on ocular health and to find evidence for a link between screen distance and refractive errors.*

### METHODOLOGY

*A cross-sectional analytical study was done over a period of 6 months from September 2021 to March 2022. Simple random probability sampling was used to achieve the required sample size. The sample was collected from departments of ophthalmology in different tertiary care hospitals in Khyber Pakhtunkhwa. Eye examinations were performed on all participants. Snellen's Eye chart placed at 6 meters was used to assess visual acuity for distance vision while near vision was examined using Jaeger's Eye Chart. Chi-square tests were applied to test the associations among categorical and continuous variables, respectively. For all the analyses, a two-sided P-value of ≤0.05 was considered statistically significant. Data were analysed by using SPSS version 26.0.*

### RESULTS

*The results showed a statistically significant association between the use of electronic devices and refractive errors, with the instance of refractive errors increasing with greater and longer exposure to such devices.*

### CONCLUSION

*Higher screentime showed a greater prevalence of refractive errors whilst the distance between the screen and eyes was also a contributing factor with larger distances shown to reduce refractive errors.*


**KEYWORDS**: *Refractive Errors, Screentime, Electronic Devices, Exposure, Ophthalmology*

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## INTRODUCTION

Refractive error can be described as the failure of the eye to properly focus light rays from a distant object onto the retina. This results in blurred vision and a requirement for refractive correction to restore correct sight. Refractive error can be classified into myopia (_short or near-sightedness'), hyperopia (_long or far-sightedness) and astigmatism.[1] In myopia, light is focussed to a point anterior to the retina because of extreme refraction at the cornea or lens and can also occur because of an increased length of the eye (_axial myopia'). In hyperopia, the opposite effect can be observed with an image forming posterior to the plane of the retina because of either insufficient refraction or a short axial length.[2] In astigmatism, light rays fail to meet at a common point due to deviation from spherical curvature.[3] All over the globe, refractive errors are considered the second largest cause of treatable blindness after cataracts. Refractive errors are usually treated with spectacles.[4] Routine clinical examination of regular patients or screening of the general population can be useful in detecting refractive errors. In developed countries, vision screening is more convenient compared to developing countries,

which stresses the necessity of providing such services in countries where a large portion of the population is excluded from such a facility.[5] School children are common subjects of vision screening which is crucial in assessing potential ocular abnormalities such as blindness and other related disorders like amblyopia.[6] Refractive error studies have also been carried out in schools built for students who are visually impaired. For example, In Zimbabwe, 3% of visually impaired school children were blind due to uncorrected myopia and aphakia.[7] While in India, 5.1% of blind-school children were visually impaired due to uncorrected aphakia and amblyopia.[8] Research into this subject has revealed variation across the globe and hints at an increased prevalence of myopia since the late 20th century.[9] In East Asia, this is more obvious. With a prevalence of 80%-90% in students who leave school, myopia is becoming a major health issue.[10] Visual impairment and blindness caused by URE in adults can take a serious toll on social and economic well-being, including reducing the educational and employment options of individuals that are economically active.[11] Across history, research looking into refractive errors across a large age range has indicated that the refractive state of the eye changes with age, this is could all be part of the normal ageing process or, as our research indicates; could have a link to how much the eye is used across a person‘s life. Just like how the lifespan of tires on a vehicle decrease depending on how much they are used, the same could be said for our own eyes, which we utilize on a regular basis to look at screens that emit radiating light. A study was conducted to find out the distribution of refractive error in patients admitted to hospitals ranging from new-borns to elderly people of 70+ years of age in ten different age groups. Hyperopic refractive errors were more common in young patients showing narrow distributions. Hyperbolicity was less common in adult age groups and showed broader distributions, these results could be partly explained by the fact that the younger generation is much more attached to technological devices as compared to older individuals.[12] In 1950, Slataper wrote about age norms of refraction for 18,000 patients ranging in age from birth to 80+ years of age showing average MOR values per year of age. His research discovered a steady shift from hyperopia toward myopia from birth until approximately 30 years of age which curiously showed a shift back toward hyperopia with an increase in age until age 65, at which time the trend reversed again.[13] The basis for this study was to close the knowledge gap for research done on refractive errors and their causative factors in Pakistan, specifically. Furthermore, the study was done with the aim of finding a link between refractive errors and the use of electronic devices amongst individuals in various universities and tertiary care hospitals of KPK.

## METHODOLOGY

This study was a cross-sectional analytical study done over a period of 6 months from September 2021 to March 2022. The samples were collected from departments of ophthalmology in different tertiary care hospitals of KPK. The study includes both males and females. Simple random probability sampling was used to achieve the required sample size. The individuals between 17 to 24 years with no other medical history were included. Students (respondents) with medications for any medical history were excluded from the study. The calculated sample size prevalence was 58% while Confidence Interval was 95%. The estimated total sample size of 400 participants was selected. The questionnaire was designed to assess the different risk factors associated with refractive errors. It comprised of questions about demographic information which included the name, age, and gender of participants. Questions about television screen time, smartphone use, computer activity, outdoor activities, and other activities like reading, studying, and physical activity was included. A semi-structured questionnaire was designed for pretesting which included 10% of the population. Pretesting was done to assess the viability of the questions. Eye examinations were performed on all participants. Snellen‘s Eye chart placed at 6 meters was used to assess visual acuity for distance vision while near vision was examined using Jaeger‘s Eye Chart. A normal Snellen‘s chart was printed with eleven lines of block letters. The first line consists of one very large random letter. Subsequent rows had more letters that decreased in size. Individuals taking the test, were required to cover one eye and stand at 6 meters or 20 feet away, and read out the letters in each row, beginning at the top. The smallest row that could be read accurately indicated the visual acuity in that specific eye. The Jaeger‘s eye chart (Jaeger‘s card) was used to test and document near visual acuity at a normal reading distance. The individuals were required to hold the test card 14 inches away from the eyes and were told to read the smallest block of text without squinting, then the next smallest block. The J value of the smallest block of text that could be read was recorded. Chi-square tests were applied to test the associations among categorical and continuous

variables, respectively. For all the analyses, a two-sided P-value of ≤0.05 was considered statistically significant. Data were analysed by using SPSS version 26.0.

## RESULTS

**Table 1: Cross Tab of the Refractor Errors Across the Gender**

| | | Refractive Error | | Chi-Square | P-Value |
|---|---|---|---|---|---|
| | | Normal f(%) | Abnormal f(%) | | |
| Gender | Male | 135 (75.0%) | 45 (25.0%) | 5.081 | 0.024 |
| | Female | 142 (64.5%) | 78 (35.5%) | | |
| Total | | 277 (69.3%) | 123 (30.8%) | | |

**Table 2: Cross Tab of the Refractor Errors Across the Location**

| | | Refractive Error | | Chi-Square | P-Value |
|---|---|---|---|---|---|
| | | Normal f(%) | Abnormal f(%) | | |
| Location | Rural | 117 (79.1%) | 31 (20.9%) | 10.604 | 0.001 |
| | Urban | 160 (63.5%) | 92 (36.5%) | | |
| Total | | 277 (69.3%) | 123 (30.8%) | | |

**Table 3: Cross Tab of the Refractor Errors with Distance from the Laptop/Computer**

| Distance from Laptop/Computer | Refractive Error | | Chi-Square | P-Value |
|---|---|---|---|---|
| | Normal f(%) | Abnormal f(%) | | |
| Less than one feet length | 87 (71.3%) | 35 (28.7%) | 0.294 | 0.588 |
| More than two feet in length | 90 (68.2%) | 42 (31.8%) | | |
| Total | 177 (69.7%) | 77 ( 30.3%) | | |

**Table 4: Cross Tab of the Refractor Errors with Distance From the TV**

| Distance from the TV | Refractive Error | | Chi-Square | P-Value |
|---|---|---|---|---|
| | Normal f(%) | Abnormal f(%) | | |
| Less than one arm‘s length | 45 (46.4%) | 52 (53.6%) | 1.475 | 0.225 |
| More than one arm‘s length | 117 (90%) | 13 (10%) | | |
| Total | 162 (71.4%) | 65 (28.6%) | | |

## DISCUSSION

In recent times, the time spent on electronic screens and video games has increased amongst children.[13] In our study, the conclusive evidence on the link between the use of electronic devices and refractive errors. Several studies in the literature support this evidence. In our study, we found that urban areas showed a greater frequency of refractive error compared to rural areas this can be supported by a study done in Sialkot which assessed refractive errors and factors associated with them among madrassa students and found that 33.3% of their sample size for urban or semi-urban had refractive errors compared to 30.2% for students coming from rural areas.[14] In our study, we found similar results with 36.5% of urban subjects showing ocular abnormalities compared to 20.9% of rural individuals. A study also showed that the distance from a screen was also a contributing factor to refractive errors with 17.9% of participants who viewed the screen from a distance of >25 cm showing refractive errors compared to 68.9% who viewed it from a smaller distance lesser than 25cm.[15] This reinforces our results which showed that smartphone use observed a greater frequency of ocular abnormalities for participants who viewed the screen less than one foot away compared to those who viewed it at a distance greater than one foot. Another study done among male primary school students in Jazan, Saudi Arabia showed that there was an association between students watching TV from a close distance and refractive error with an odds ratio of less than one for large distances from the TV, as large distances decreased the odds of refractive error.[16] This evidence supports our study which showed a similar trend with the percentage of abnormalities decreasing when the distance from the TV screen was increased. A study was done in Italy, which assessed the relationship between video game use and the development of refractive error analysis was done where a control group and a video game group were studied.[17] In the test, the video game group had a higher prevalence of ametropic eyes compared to the control group (90.4% vs 51.8% of eyes, respectively; P < .0001), which remained when the low and high electronic use subgroups were considered. Furthermore, the video game group had a higher prevalence of astigmatism than the control group (58.5% vs 20.0% of eyes, respectively; P < .001). Since

laptops are a platform for gaming, a similar pattern should be observed with individuals who use laptops and show signs of refractive errors which our results proved beyond doubt.[18]

## CONCLUSION

In our study, we found irrefutable evidence supporting the link between refractive errors and screen usage, most of the participants were found to experience a range of ocular abnormalities and this trend was found to vary according to demographic. Steps need to be taken to control the amount of screen exposure and to reduce the need for screens among all populations.

## LIMITATIONS

In this study, the screen time was not recorded using different gadgets which could be one of the factors of refractive errors.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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**CONTRIBUTORS**

1. **Waleed Ahmad** - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval
2. **Ahsan Alvi** - Data Acquisition; Data Analysis/Interpretation; Critical Revision; Supervision
3. **Abdur Rauf** - Data Acquisition; Data Analysis/Interpretation; Critical Revision
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5. **Syed Hassan Shah** - Data Acquisition; Data Analysis/Interpretation; Critical Revision
6. **Ikram Ullah** - Data Acquisition; Data Analysis/Interpretation; Critical Revision

# ASSOCIATION OF THE FREQUENCY AND INTENSITY OF SMOKING WITH THE DEVELOPMENT OF HALITOSIS

Hira Butt[1], Maria Jabbar[2], Nauman Rauf Khan[3], Angbeen Zafar[4], Sadaf Amjad Khawaja[5], Fatima Hafeez[6]


## ABSTRACT

### OBJECTIVES

*To find the association of the frequency and intensity of smoking with the development of halitosis.*

### METHODOLOGY

*A cross-sectional comparative study was carried out on 100 patients, 50 smokers and 50 non-smokers, visiting Sharif Medical and Dental College, Lahore from June 2019 to September 2020. All smokers 18 years of age and above irrespective of their gender were included in the study. Smokers with any systemic illness were excluded from the study. Inclusion criteria for non-smokers were all individuals 18 years of age and above irrespective of their gender. The exclusion criteria for non-smokers was the presence of any systemic illness. The intra-oral examination was done, and the findings were recorded on a specialized proforma.*

### RESULTS

*There was a statistically significant association between the presence of halitosis and smoking status (smoker/non-smoker) (p=≤0.001). The association of intensity of smoking (p=0.609) and frequency of smoking (p=0.609) with halitosis was non-significant.*

### CONCLUSION

*The percentage of smokers experiencing halitosis in comparison to the non-smokers was much greater. Light smokers reported halitosis more in comparison to intermittent and heavy smokers. Those who smoked 1 to 5 times/day reported the presence of halitosis more in comparison to the ones smoking more than 5 times a day.*


***KEYWORDS***: *Smoking, Halitosis, Frequency, Intensity*

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## INTRODUCTION

Any undesirable odor in exhaled air is referred to as halitosis, regardless of whether the odoriferous compounds come from oral or non-oral origins. People with halitosis are frequently ashamed about it, and their social lives are negatively affected as a result.[1] The social consequences of halitosis frequently motivate sufferers to seek medical assistance. After cavities and periodontal disease, halitosis is the third most common reason for dental visits in the United States.[1] There should, however, be a distinction made between true halitosis and pseudo-halitosis or halitophobia. In the case of true halitosis, both local and general variables may play a role in the genesis of condition.[2] Since the perception of halitosis varies across culturally different communities, the prevalence of halitosis varies according to the research population. According to population-based studies in Japan, halitosis affects 6–23% of the population. According to a recent study conducted in Saudi Arabia, around 22% of adults

have self-perceived halitosis, which is strongly linked to water pipe smoking tobacco.[3] Furthermore, around 25% of those with halitosis have a significant condition that interferes with their social functioning. Individuals may, for example, be frightened and humiliated in the company of others, avoiding social engagement and close connections.[4] There is epidemiological and clinical research that tobacco has negative impacts on oral health. Tobacco smoking has been linked to an increased prevalence and severity of periodontal diseases, as well as a higher risk of tooth loss, according to various researchers. Cigarette smoking and other types of tobacco have a variety of negative effects, and tobacco use is linked to gingival, oral mucosal and dental changes. Cigarette smoking is a public health issue because cigarette smoke encompasses a wide range of toxins to which smokers are constantly exposed. These toxins can affect the mouth's microbial ecology through a variety of methods, including antibiotic actions and oxygen deprivation.[5] Tobacco smokers have a distinctive stale smell that is difficult to get rid of. According to a previous study, cigarette smoking is the second leading cause of halitosis. As the user adapts to the smell in a short period, halitosis is very often unnoticed by the sufferer. Smokers had a very ambiguous explanation of gingival problems and halitosis they were experiencing, according to Romano et al.[6] Furthermore, smoking causes hypo-salivation and periodontal disease, both of which lead to halitosis. Rad et al. examined how smoking affected salivary flow rate, as well as oral and dental health, in 100 smokers and 100 non-smokers.[7] This study aimed to find the association of the frequency and intensity of smoking with the development of halitosis.

## METHODOLOGY

A cross-sectional comparative study was carried out on 100 patients, 50 smokers and 50 non-smokers, visiting Sharif Medical and Dental College, Lahore from June 2019 to September 2020. The study was conducted after ethical approval from Sharif Medical Research Centre (SMRC). The sample size was calculated by keeping the prevalence of halitosis to be 90%, precision 8% and 95 % confidence level, the sample size was calculated to be 50.[8] The study was conducted on 100 patients, 50 smokers and 50 non-smokers. The sampling technique used was non-probability convenience. All smokers 18 years of age and above irrespective of their gender were included in the study. Smokers with any systemic illness were excluded from the study. Inclusion criteria for non-smokers were all individuals 18 years of age and above irrespective of their gender. Exclusion criteria for non-smokers were the presence of any systemic illness. Informed consent was taken from the participants. The intra-oral examination was done, and the findings were recorded on a specialized proforma. The intensity of smoking was classified as light smokers (1 to 10 cigarettes/ day), 11 to 15 cigarettes/ day (intermittent) and 1 pack of cigarettes/ day (heavy). The frequency of smoking was classified as smoking 1 to 5 times a day and smoking more than 5 times a day. Recorded data were coded, entered, and analyzed using SPSS statistical package version 23.0. A P-value of 0.05 or less was considered significant. Chi-square test was used to find the association of status of smoking (smoker/non-smoker) and frequency of smoking (1 to 5 times a day/ More than 5 times a day) with halitosis and the strength of their association was determined using Phi-coefficient. Fisher's exact test was used to find the association between the intensity of smoking (light/intermittent/heavy) and halitosis, and the strength of the association was determined using Cramer`s V coefficient.

## RESULTS

A total of 100 participants were included in the study, 50 smokers and 50 non-smokers out of which 71% were males and 29 % were females with a mean age of 29.29 ± 11.946 years.

**Table 1: Association of Smoking with Halitosis**

| Smoking Status | Halitosis | | P-Value | Phi Co-efficient |
|---|---|---|---|---|
| | Yes f(%) | No f(%) | | |
| Smoker | 25(25%) | 25(25%) | ≤0.001 | 0.386 |
| Non | 7(7%) | 43(43%) | | |

Table 1 shows a statistically significant weak positive relationship between the status of smoking and halitosis with a higher percentage of smokers experiencing halitosis in comparison to the non-smokers.

**Table 2: Association of Intensity of Smoking with Halitosis**

| Intensity Of Smoking | Halitosis | | P-Value | Cramer's v Co-efficient |
|---|---|---|---|---|
| | Yes f(%) | No f(%) | | |
| 1 to 10 cigarettes/ day (light) | 23 (46%) | 22 (44%) | 0.609 | 0.201 |
| 11 to 15 cigarettes/ day (intermittent) | 1 (2%) | 3(6%) | | |
| 1 pack cigarettes/ day (heavy) | 1 (2%) | 0(0%) | | |

Table 2 shows a statistically non-significant positive and moderately strong relationship between the intensity of smoking and the presence of halitosis. It was evident that the percentage of light smokers who experienced halitosis was higher in comparison to intermittent and heavy smokers.

**Table 3: Association of Frequency of Smoking with Halitosis**

| Frequency of Smoking | Halitosis | | P-Value | Cramer's v Co-efficient |
|---|---|---|---|---|
| | Yes f(%) | No f(%) | | |
| 1 to 5 times a day | 22(44%) | 24(48%) | 0.609 | -0.147 |
| More than 5 times a day | 3(6%) | 1(2%) | | |

Table 3 shows a statistically non-significant weak negative association between frequency of smoking and halitosis with halitosis being more prevalent in those smoking 1 to 5 times/day in comparison to the ones smoking more than 5 times a day.

## DISCUSSION

The presence of foul or bad odor that arises mostly from the oral cavity is known as halitosis. Halitosis is a condition that affects people all around the world. Halitosis can have a multifactorial aetiology. Halitosis is divided into two types: primary halitosis, which is caused by lungs exhaling, and secondary halitosis, which is caused by the oral cavity or respiratory system.[9] Chronic sinusitis, nasopharyngeal drip, nasopharyngeal foreign material, respiratory disease, gastrointestinal conditions like GERD, diabetic ketoacidosis, kidney failure, liver failure, as well as certain relatively uncommon metabolic disorders like diabetic ketoacidosis and trimethylaminuria are all extra-oral or systemic causes of halitosis.[10] In addition to the clinical disorders indicated above, earlier research has linked halitosis to several additional factors. Garlic, spicy foods, tobacco, and alcohol are some of the foods that might induce halitosis.[11] However, halitosis is quite often caused by an oral cavity problem (about 90% of the time). Bacterial decomposition by gram-negative anaerobes, especially those found on the posterior dorsal surface of the tongue, produces volatile Sulphur compounds (VSCs) from Sulphur-containing amino acid residues, particularly cysteine as well as methionine, which cause halitosis.[12] A person's bad breath might be a social liability. When it comes to identifying and managing foul odor, self-perception is essential. In one week, 41% of practicing dentists in the United States documented severe bad breath, according to a recent survey.[13] In a study conducted, Eli et al. determined that self-perception of mouth odor is a multifactorial, psycho-physiological concern that is strongly connected to one's body esteem and psychopathological characteristics.[14] According to one study, the incidence of halitosis in Korean adolescents was 23.6%.[15] VSCs are found in cigarette smoke, and they are one of the main causes of halitosis in smokers.[16] In this study, we concluded that about 25% of smokers had halitosis. About 46% of the participants who smoked 1-10 cigarettes per day had halitosis. Smoking causes decreased production of saliva and periodontal problems,[17] both of which lead to halitosis. Rad et al. investigated how smoking affected salivary flow rate, as well as oral and dental health, in 100 smokers and 100 non-smokers. The researchers noted that smokers' flow rate of saliva was 0.38 (0.13) ml/min, while non-smokers' salivary flow rates were 0.56 (0.16) ml/min. There was a statistically significant difference. Furthermore, 39% of smokers and 12% of non-smokers said they had xerostomia with statistically significant differences among the two categories[7]. Consequently, it was discovered that while non-smokers and mild smokers possess similar dental health, heavy smokers had worse dental health than non-smokers.[18]

## CONCLUSION

The percentage of smokers experiencing halitosis in comparison to the non-smokers was much greater. Light smokers reported halitosis more in comparison to intermittent and heavy smokers. Those who smoked 1 to 5 times/day reported the presence of halitosis more in comparison to the ones smoking more than 5 times a day.

## LIMITATION

Assessing the oral hygiene status of the participants

would have made it very clear if the halitosis was due to poor oral hygiene maintenance or can it solely be attributed to smoking.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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# 5 FACTORS PERSONALITY TRAITS AMONG MEDICAL STUDENTS, A CROSS-SECTIONAL STUDY

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***ABSTRACT***

***OBJECTIVES***

*This study aimed to find out the 5-factor personality traits among medical students.*

***METHODOLOGY***

*It was a cross-sectional descriptive study conducted between January to March 2020. The study setting was a private medical college in Peshawar. The ethical approval was taken from the Gandhara University, Peshawar. A total of 250 students were selected. The systematic random sampling technique was used. The data was collected through the NEO-FFI-3 questionnaire. Data were analyzed in SPSS Version 26.*

***RESULTS***

*The results show that the score for the personality trait of agreeableness is higher as compared to other traits (t=60.405, p=.000) while the least score for the personality trait is Neuroticism as compared to other traits (t=40.615, p=.000)*

***CONCLUSION***

*The study shows interesting results that most students are ready to open to new experiences and the less personality trait to be found was the extraversion type.*

***KEYWORDS**: 5-Factor Personality, Medical, Neuroticism, Extraversion, Agreeableness*

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## INTRODUCTION

Personalities are characterized in terms of -psychological traits‖ which are relatively enduring characteristics which are influenced by their interactions, adaptations, and other social aspects. Personality traits reflect people's characteristic patterns of thoughts, feelings, and behaviors.[1] Identity characteristics infer consistency and stability-someone who scores high on a particular trait like extraversion is anticipated to be agreeable in numerous circumstances and over time. In this way, trait psychology rests on the thought that individuals differ from one another in terms of fundamental characteristics measurement that persists.[2] The foremost widely used framework of characteristics is called the five-factor show. This framework incorporates five wide traits that can be recalled with the acronym OCEAN: openness, conscientiousness, extraversion, appropriateness, and neuroticism. Each of the major characteristics of the enormous five can be partitioned into aspects to provide a finer grand examination of people's identity. One major task concerns the relative control of people's characteristics versus the situation in which they discover themselves as indicators of their behavior. Mayer argued that personality may be viewed as a system, Five-

Factor theory is concerned with the current knowledge about personality[3,4]. Five personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) are largely representative of the most basic factors of adult personality there is a relationship between the Five-Factor Model and the ability to career success mentally.[5] Research in health psychology has traditionally used a wide but unsystematic combination of personality concepts in efforts to link individual differences and health. These include nervousness, anger, hatred, aggression, fear, stress, doubt, locus of control, hardiness, exhaustion, hope, misconduct, trust, and many others.[6] It is frequently stated that, besides cognitive skills, a combination of personality aspects is necessary for people to be successful in medical studies and finally in their medical professions as well. Nevertheless, there is a further dispute as to which personality traits are typical of students in medical studies as compared to students in other educational programs and which exact personality traits foretell medical student performance in the pre-clinical years.[7,8] Analyzing the personality traits is important for the following reasons. First, it describes the personality traits of the students, which is essential for understanding their learning styles. Second, personality traits are useful in foretelling medical students' academic and clinical performances. And finally, awareness of their personality traits helps them to plan better and perform better in their practical life.[9,10] Sleep pattern also affects personality traits, those medical students who don't get adequate sleep have neuroticism and extraversion personality which means that these traits are found in most medical students because of their sleeping pattern.[11,12] The personality traits have a crucial role in the professional career of an individual. Therefore, we designed this research study to find out the 5-factor personality traits in the medical students of the Peshawar.

## METHODOLOGY

It was a Cross-Sectional descriptive Study conducted on medical students of Peshawar. Ethical approval was taken from the Ethical Committee of Gandhara University. This study was conducted from January to March 2020. A total of 250 Students of MBBS were recruited through systematic sampling techniques. The students were selected from the attendance list having odd numbers. 50 students were selected from each professional year of the MBBS. A Brief Version of the Big Five Personality Inventory -Big Five Inventory-10 (BFI-10)‖ was used. it is developed by Rammstedt, Kemper, Klien, Beierlein, & Kovaleva, in 2013. This scale is based on the five-factor model. This inventory measures the five personality traits of an individual i.e., Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience. A pilot study was done on 10 percent of the population. Data were entered into SPSS for analysis.

## RESULTS

Out of 250 students, 140 were male students whereas 110 were female students. The mean age of the students was 22±2 years.

**Table 1: Five-Factor Personality Traits of the Medical Students**

| Variable | Mean ± SD | T | P-Value | 95% CI | |
|---|---|---|---|---|---|
| | | | | Lower | Upper |
| **Extraversion** | 5.99±1.788 | 46.532 | 0.000 | 5.74 | 6.24 |
| **Consciousness** | 6.99±1.837 | 52.857 | 0.000 | 6.73 | 7.25 |
| **Openness to Experience** | 7.48±1.837 | 56.533 | 0.000 | 7.22 | 7.74 |
| **Agreeableness** | 7.21±1.659 | 60.405 | 0.000 | 6.98 | 7.45 |
| **Neuroticism** | 6.28±2.150 | 40.615 | 0.000 | 5.98 | 6.59 |

## DISCUSSION

A cross-sectional study was conducted on 250 undergraduate medical students. It was seen that the score for the personality trait of agreeableness is higher as compared to other traits (t=60.405, p=.000) while the least score for the personality trait is neuroticism, as compared to other traits (t=40.615, p=.000). The results show that the most common personality trait found is openness to experience which suits best to the medical profession as it is all about gaining new knowledge and new techniques to compete with the world. The medical students have different personalities those students who are preferring surgery further have neuroticism personality.[13] According to a study in USA medical students were high in extraversion and openness while agreeableness was average.[14] Another study suggested that the higher score for extraversion and agreeableness are very important for doctors' collaboration and communication skills.[15] Australian Literature shows that those students who are studying in urban area medical colleges are more open to experience, and agreeableness which is also showing relation to our study being conducted because the population chosen for this study also resides in the urban area[16]. Another study from Pakistan shows the score for the openness to experience is the highest among all followed by agreeableness which shows the same result as our data is showed up, while the

lowest scorer was the neuroticism which shows deviation from our study.[17] The study conducted in CMH Lahore results shows that the higher score got by agreeableness followed by openness to experience they conducted the study to make a relationship between anxiety and personality traits found among medical students, but the ratio of the agreeableness was highest among all while the least score was neuroticism which shows deviation with our study.[18] Another study was conducted in Khyber Pakhtunkhwa, Pakistan the study was merely on the different personality traits among undergraduate medical students and dental undergraduate students. In that study, it was conducted that the students are more into neuroticism, agreeableness, and extraversion and less into openness and conscientiousness, while our study conducted which was conducted on undergraduate medical students only, we found that they are more open to new experiences and less to extraversion.[19]

## CONCLUSION

The study shows very interesting results that most students have openness to new experiences as a personality trait along with agreeableness which will benefit them in the medical field.

## LIMITATIONS

The sample size was small and it was not taken from another medical college.

**CONFLICT OF INTEREST:** None

**FUNDING SOURCES:** None

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# FREQUENCY AND RISK FACTORS OF COVID-19 IN PESHAWAR

Muhammad Hamad Khan[1], Shehla Qamar[2], Ameer Hamza[3], Uzma Wali[4], Mushfiq Ahmad[5], Qandeel Sultan[6], Muhammad Tariq Shah[7]

***ABSTRACT***

***OBJECTIVES***

*We aimed to determine the frequency and risk factors associated with the COVID-19 virus, Peshawar*

***METHODOLOGY***

*A cross-sectional study was conducted at teaching hospitals of Peshawar, Khyber Pakhtunkhwa. The time duration was from February to March 2022. The sample size was 328 patients.The sample was collected through convenient sampling technique. The patients having chronic medical illnesses were excluded from the study. A well-designed questionnaire was developed to assess the frequency and risk factors of COVID-19. The pilot study was done on 10% of the population. The ethical approval was taken from the Gandhara University of Peshawar Data were analyzed using SPSS statistical package version 23.0.*

***RESULTS***

*Out of 328, 169 were male and 159 were females. Among males 33(19.3%) were infected with Covid 19 and among females 46(29.3%) were infected. The Covid infection was 29(28.4%) in employed and 50(22.1%) in unemployed. Covid infection positivity in participants with nuclear family system was 33(25%) and among joint family system was 46(23.5%). 44 out of 328(13.3%) participants with pre morbidities had Covid infection.*

***CONCLUSION***

*A strong relationship between the Covid-19 virus with gender, family system, occupation of the participants, chronic comorbidities, hand hygiene and use of protective face masks were found.*

***KEYWORDS***: *Covid-19, Diabetes, Chronic Respiratory Disease, Anemia, Hypertension*

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## INTRODUCTION

COVID-19, a coronavirus identified in 2019, SARS-CoV-2, has caused one of the worst pandemics of this century with a death toll of almost 6.12 million.[1] In Pakistan, the first case was reported on February 26, 2020. Almost 30,000 deaths among the 1.52 million cases have been reported in Pakistan.[2,3] Pathophysiology and Imaging findings of COVID-19 Infection reveal that the virus has organ system effects, including cardiothoracic, gastrointestinal, genitourinary, neurologic, and vascular systems. This could mean that people with single or multiple unhealthy organ systems might be more at risk.[4] The covid-19 pandemic has led to a global debate about its susceptibility in people across the world. Various studies have revealed that certain factors lead to an elevated risk of hospitalization, extreme complications, and death.[5] One of the most important risk factors that have been extensively analyzed is immunocompromising.[6] Individuals with a weaker immune system tend to be more sensitive to the Covid-19 infection and may develop major complications.[7] About 20% of

COVID-19 patients are hypertensive, but some elderly COVID-19 populations have high blood pressure rates exceeding 50%, consistent with the prevalence of hypertension in persons of advancing age.[8] Data from China indicates a link between high blood pressure and more severe COVID-19 infection. A meta-analysis of nine studies from China examining COVID-19 comorbidities found a significant association between the severeness of COVID-19 and a history of hypertension.[9] Comprehensive studies in covid-19 patients with and without diabetes have revealed substantial evidence to prove the augmented susceptibility and complications in patients with diabetes.[10] A cohort study of the total population of Scotland has interpreted that, overall risks of fatal or critical care unit-treated COVID-19 were substantially elevated in those with type 1 and type 2 diabetes.[11] It was observed in another study that more advanced stages of chronic kidney disease were associated with worse outcomes.[12] The virus spreads through aerosol droplets. This means that barriers such as face masks might help in preventing its transmission.[13] It also means that people who are not adapting measures that prevent aerosol transmission may make them more prone to the virus. Anemia in patients with Covid-19 has been hypothesized to increase their chances of mortality. A study evaluated all adult patients at a large tertiary health system during March 2020 who were diagnosed with COVID-19, excluding patients without a complete blood count (CBC). Furthermore, moderate-severe anemia (Hb <11 g/dL) was an independent risk factor for severe COVID- 19 outcomes.,[14,15] People working in different environments may be exposed to the virus in different ways. A study used an innovative index for assessing the vulnerability of employees of different occupations during the COVID-19 pandemic in Iran.[16] The vulnerability of 8.2% of employees from the covid-19 pandemic was high and the worst case of susceptibility principles was exposure to contaminated surfaces.[17] A developing country like Pakistan has poor social and economic determinants of health. There are limited resources, and the health care system is weaker than other countries when it comes to controlling the Covid19 pandemic. We have assessed different factors that have led to a surge in the prevalence and frequency of covid-19 infection.

## METHODOLOGY

A cross-sectional study was conducted at teaching hospitals of Peshawar, Khyber Pakhtunkhwa. The time duration was from February to March 2022. The sample size was 328 patients. The sample was collected through convenient sampling technique. The patients having chronic medical illnesses were excluded from the study. Between 22 - 50 years of age were included. Informed consent was taken from the participants. A well-designed questionnaire was developed to assess the frequency and risk factors of COVID-19. The pilot study was done on 10% of the population. The ethical approval was taken from the Gandhara University of Peshawar. Data were analyzed using SPSS statistical package version 23.0.

## RESULTS

**Table 1: Crosstab Across the Gender, Employment, & Family System**

| Variable | | Covid Infection | | Chi-square | P-Value |
|---|---|---|---|---|---|
| | | Yes f(%) | No f %) | | |
| Gender | Male | 33(19.3%) | 136(79.5%) | 6.08 | 0.048 |
| | Female | 46(29.3%) | 111(70.7%) | | |
| Occupation | Employed | 29(28.4%) | 71(69.6%) | 6.23 | 0.044 |
| | Unemployed | 50(22.1%) | 176(77.9%) | | |
| Family System | Nuclear | 33(25.0%) | 99(75.0%) | 1.42 | 0.49 |
| | Joint | 46(23.5%) | 148(75.5%) | | |

**Table 2: Frequencies of Risk Factors of Covid-19**

| Variable | | f(%) |
|---|---|---|
| Did you regularly use face mask before getting the covid 19 infection? | Yes | 238(72.6%) |
| | No | 90(27.4%) |
| Did you follow proper hand washing practices before getting covid 19 infection? | Yes | 277(84.5%) |
| | No | 51(15.5%) |
| How frequently you were washing your hands in day? | < 10 times a day | 207(64.0%) |
| | >10 times a day | 121(36.0%) |
| Did you use sanitizer? | Yes | 210(64.0%) |
| | No | 118(36.0%) |
| Did you follow social isolation? | Yes | 166(51.0%) |
| | No | 162(49.0%) |
| Did you have any serious underlining medical conditions before getting covid 19 infection? | Diabetes | 08(2.4%) |
| | Anemia | 12(3.7%) |
| | Hypertension | 05(1.5%) |
| | Asthma | 03(0.9%) |
| | Allergic | 04(1.2%) |
| | Kidney stones | 03(0.9%) |
| | More than one illness | 09(2.7%) |
| | Nil | 284(86.0%) |

## DISCUSSION

Identifying the risk factors associated with the COVID-19 infection is essential for the public to adopt better safety measures. It is important for healthcare professionals and health policymakers to review and change the existing standards of practice and implement a more effective approach to health management. This study assessed the risk factors related to the COVID-19 infection. Table 1 shows that 29.3% female participants were infected with COVID-19 infection as compared to 19.3% of male participants. Contrary to our results, a European study has found that females had better cellular protection against severe infection due to their genetic differences.[18]Participants who were exposed to different environments during the pandemic had different rates of infection. We found that 28.4% of employed people were at more risk for the infection, compared to the 22.1% of unemployed participants according to table 1. Similar findings were seen in another research conducted in Iran with 8.2% of employees more susceptible to the virus. These results show that staying out of home for work makes you more susceptible to the virus.[19] Throughout the pandemic, the general view was to minimize the interaction between people. We evaluated the family systems of the participants to see whether persons living in nuclear family system had more susceptibility towards COVID-19 infection or not. In our study there was no significant difference among the family systems of getting this infection. A survey in Pakistan reported that 16.55% of the participants got infection from family members.[6] We devised a set of questions to identify risk factors for the COVID-19 virus. According to table 3, only 72.6% of the participants regularly used facemasks. This is not enough to halt the spread of the virus in the population as studies have revealed that the virus spreads through aerosol droplets.[20] We found that 84% of the participants reported that they followed proper handwashing practices. From a conflicting point of view, we found that only 36% of the participants washed their hands more than 10 times a day. considering the review of measures and initiatives adopted by governments, regulators, utilities, and other stakeholders in 84 countries has concluded that hygiene promotion has improved in many low-income countries including Pakistan.[21] Our results showed that almost half (49%) of the participants did not follow the guidelines regarding social isolation during the pandemic. Another study consisting of a mathematical model shows that the spread of the virus can be minimized more using isolation measures.[22] One of the most important medical conditions that were extensively studied because of its effect on people with the virus is diabetes.[12] Our study revealed that 2.4% of the participants reported having diabetes, 3.7% of the participants were anemic whereas 1.5% were hypertensive. Anemia and hypertension are hypothesized to be major risk factors according to various research articles.[09] Asthma was prevalent in 0.9% of the participants and 1.9% of the participants revealed that they had different allergies. The study also found that 0.9% of the participants had kidney stones. Widespread studies have not been done on the relationship between kidney stones and the covid-19 virus. This study could help in any future progress regarding this factor. It is recommended that community should be aware about the Covid 19 virus disease and focus on the mask, vaccination

for eradication of disease from communities.

## CONCLUSION

It is concluded that significant interface was observed of Covid 19 with the gender, family, occupation, pre morbidities of the participant.

## LIMITATIONS

The sample size was small and was not collected from most of the hospitals of Peshawar. Some of the factors were missed during the data collection.

**CONFLICT OF INTEREST:** None

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# AN ACQUAINTANCE OF INTERNET SAFETY GUIDELINES AMONGST STUDENTS

Nayab Khalid Qazi[1], Laila Khan[2], Muhammad Huzaifa[3], Parkha Faheem[4]


## ABSTRACT

### OBJECTIVES

*To assess the frequency of hours spent on the internet by students and the purpose of internet usage. To estimate the frequency of students who had safety lessons related to internet usage. To know how many students are following those safety guidelines.*

### METHODOLOGY

*A cross-sectional study was conducted in Sardar Begum Dental College of Peshawar in February-March 2022. A total of 75 self-administered questionnaires were distributed among 2nd-year BDS students by purposive sampling technique. Questions were about the hours spent on the internet for studying, social networking, entertainment, and work. Students were also asked if they have ever received lessons on how to stay safe on the internet and whether they are following internet safety guidelines. Data analysis was done using SPSS, version 25.*

### RESULTS

*The response rate was 100 per cent. The internet was mostly used for social media, education, and entertainment purposes by participants. 58.7% had received internet safety guidelines. 64% of participants were not following those rules in their daily use of the net.*

### CONCLUSION

*A set of safety guidelines needs to be in place for the education of students to protect them from the harmful effects of unfiltered internet usage.*


***KEYWORDS**: Online, Cyber Security, Internet Safety, Students, Social Networking*

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## INTRODUCTION

The internet is a mass communication tool that has shaped our modern world and continues to dominate every aspect of it.[1] Since its introduction to the general populace in the early 80s, the internet has been a large factor in the normal working of the public, private, academic, and business lives of people around the world.[2] After its establishment as a global tool for communication, the internet played a key role in the exponential growth of commerce through internet trade, acquisition of knowledge through the plethora of online open-source encyclopedias, promotion of academia through online research sharing, finance through internet banking and other related aspects, entertainment through media streaming, and above all connectivity through social media.[3] However, with the upsurge of internet usage, there has also been a slow seeping of internet dependency into the public and private lives of individuals which have exposed them to the colossal hazards that unchecked internet usage

can yield to an individual, especially those belonging to a younger age group.[4] Amongst the myriad of hazards entailing usage of the internet by younger individuals, the most prominent include facing online harassment by strangers in the form of cyberbullying, exposure to suicide culture, self-harm, profane language and substance abuse through mainstream media, addiction to excessive internet consumption, severe procrastination and wasting of important time by aimlessly surfing the internet, sexual exploitation and harassment of minors as well as easy access and exposure to immoral contents.[5] Review articles were identified via Google Scholar for six forms of online harm to youth this is: cyberbullying, online sexual exploitation, sexting, online fraud, hacking, and identity theft, online suicide and self-harm promotion, and inter-net overuse or addiction.[6] Under these conditions, it is imperative for a set of safety guidelines to be in place for the education of people to protect them from the harmful effects of unfiltered internet usage. A set of internet safety guidelines is mentioned by Eric S. Anderson et al.[7] These guidelines can be manifested in different ways according to the body setting the guidelines in place.[8] Personal education towards internet safety guidelines can introduce individuals to surfing the internet to protect themselves from immoral content, cyber bullying or wasting of time as well as guide them as to how one could protect oneself from potential hackers as well as invasive malware which attacks computer systems through the internet. Guidelines can also be set through parental monitoring of adolescent internet usage at home direct through parental mediation in what content their children could access, parental locks on apps, websites, and channels deemed inappropriate or unsafe for children as well as communication with adolescents and appropriate recommendations on safer internet usage.[9,10] Guidelines against the harmful aspects of the internet can also be put in place by institutions or by official service providers which can policy and monitor internet usage by their users.

## METHODOLOGY

It was a cross-sectional study conducted in February-March 2022. A self-administered questionnaire was used to gather data from students at Sardar begum dental college, Peshawar. The sampling frame for this study was 75 students of 2nd-year bds. All the students of this professional year participated in the study. After clarifying the study, forms were distributed among all the undergraduates in the classroom. Questions were about the time students spend on the internet for studying, social networking, entertainment, and other things. Students were also asked if they have ever received lessons on how to stay safe on the internet and whether they are following internet safety guidelines. The ethical approval was taken from the Gandhara University, Peshawar. Data analysis was done using SPSS manufactured by IBM company, version 25. Mean and standard deviation was calculated using descriptive analysis.

## RESULTS

A total of 75 students participated in the study. The mean age of students was 20.75 and out of 75, 34 (45.3%) were male and 41 (54.7%) were females.

**Table 1: Student's Internet Usage**

| Internet Usage | f(%) |
|---|---|
| Education | 17 (22.7%) |
| Work | 9 (12.0%) |
| Social Media | 35 (46.7%) |
| Entertainment | 10 (13.3%) |
| Other | 4 (5.3%) |

**Table 2: Time Spent on the Internet by the Students**

| Time Duration | f(%) | Mean | Standard Deviation |
|---|---|---|---|
| Less than 1 hr. | 01(1.3%) | 2.60 | 0.520 |
| 1-3 hr. | 28(37.3%) | | |
| More than 4hrs. | 46(61.3%) | | |

**Table 3: Students with the Acquaintance and following the Internet Safety Guidelines**

| | An Acquaintance of Internet Safety Guidelines | | |
|---|---|---|---|
| | f(%) | Mean | Standard Deviation |
| Y | 44 (58.7%) | 1.41 | 0.496 |
| N | 31 (41.3%) | | |
| | Students following the Safety Guidelines | | |
| Y | 48 (64%) | 1.36 | 0.483 |
| N | 27 (36%) | | |

## DISCUSSION

According to our study, most of the students used the internet for social media (46.7%), education (22.7%), entertainment (13.3%) and work (12%). According to Kristan Aorjan et al[11], the most common cause of internet usage was to look for information (10.0%) and random browsing was the most usual (12.3%). The least common was online gambling (0.6%), users didn't show any addictive behavior in this group. While social networking (14.2%), online shopping (2.3%), gaming (7.9%) and pornography (7.6%) were shown. Most of our study participants (61.3%) spend more than 4hrs daily on the internet. The Shashank V.Joshi et al[12] studies showed that teenagers' media usage and

screen time (13-17 years old) was a standard of 6 and a half hours. In a Pew survey conducted in the USA for internet usage, teens are online daily (92%), relentlessly (56%) and almost always (24%).[13] Whereas (58.7%) of our participants were acquainted with internet safety guidelines while (41.3%) were not. According to Jessica Ortega-Baron et al study, there were 120 students in the intervention group and 45 in the control group. During school hours Safety.net program was implemented in the intervention group, and it was not applied to the control group. No remarkable changes were found between the intervention and the control group. Our study revealed that safety guidelines were followed by 64% of the participants. A study showed that website filtering software is more likely to be used by parents who are using home computers.[14] In the meantime, the recurrence in which teens utilize the web has reliably appeared to be emphatically related to the recurrence in which they experience online risks.[15,16,17] Only 16% of parents restrict & monitor the online activities of their children using parental control apps, as reported by Pew Research Report 2016.[18] The low Adoption rates for technical monitoring of teens' mobile smart devices suggest a potential disconnect between the technical solutions currently available for mobile online safety, their adoption & use.

## CONCLUSION

A set of safety guidelines needs to be in place for the education of students to protect them from the harmful effects of unfiltered internet usage. These guidelines can be shown in different ways according to the body setting the guidelines in place.

## LIMITATIONS

This study's responses were based on self-reports. The study's exploratory nature and the sample force us to be cautious with the interpretation and generalization of the results.

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