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ORIGINAL ARTICLE

Knowledge and Practice about COVID-19 among Medical Students

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ABSTRACT

Background: Covid-19 pandemic has brought the world to a standstill where the only hope to end this is the prevention and control of the disease. Medical students hold significant importance in this crisis as being the individuals at increased risk as well as future health care providers.
Aim: To assess the knowledge and practice regarding Covid-19
Methods: A cross-sectional study was conducted at Lahore Medical and Dental College, Tulspura. The duration of study was three months from Feb 2021 till April 2021 after the approval of synopsis by IRB committee, LMDC. Study Population included final year MBBS students. Sample size was n=113.Sampling technique used was non-probability convenience sampling technique. Data collection was done using a structured questionnaire consisting of three sections viz socio demographic characteristics, knowledge and practice about Covid-19. Data entry and analysis was done using IBM SPSS version 21.
Results: Study participants included 48.7% males and 51.3% females. Most of the students 99.1% were aware of the Covid-19 pandemic. About 99.1% students also knew that it is an infectious disease and 96.5% knew that a virus is the causative agent of Covid-19. However, 84.1% had correct knowledge regarding the incubation period of the disease. Maximum respondents 73.5% believed that everyone is equally susceptible to get infected with Covid-19. Fever and cough are the most common symptoms of the disease and internet and electronic media are most common source of information regarding Covid-19. Majority 46% of respondents did not adopt good practice of regular washing of hands. Nearly 63.7% ate healthy food and 73.5% maintained healthy life style focusing on outbreak
Conclusion: The medical students had adequate basic knowledge regarding the disease, electronic media and internet being the most common source of knowledge. The practices of mask wearing and adoption of healthy lifestyle were widely adopted yet the practice of hand hygiene and reduced social mobility was poorly conducted.
Keywords: Covid-19, knowledge and practice, medical students

INTRODUCTION

Covid-19 (CoV-19) is allied to the Nidovirales sequence of the Coronaviridae family (CoV) that are positive-sense, single-stranded, non-divided RNA viruses. CoVs when isolated are of four types based on their antigen: alpha-, beta-, gamma-, and delta CoVs[1]. CoVs, like the Severe Acute Respiratory Syndrome (SARS) and the Middle East Respiratory Syndrome (MERS), brought about by SARS-CoV and MERS-CoV, consecutively, led to highly fatal infections in people[2].The SARS epidemic occurred in Southern China in November 2002 and later spread to 17 nations, affecting 8,089 individuals with a case-casualty rate of 9.6%[3]. MERS, which started in 2012 in Saudi Arabia and spread to 21 nations around the planet, affected 2,506 individuals with 34% case-casualty rate. (4) In 2020, another worldwide pandemic has arisen, brought about by another strain of CoV called SARS-CoV-2. This pandemic began in Wuhan, China in December 2019, potentially because of cross-species transmission[5].

Furthermore, it later inflicted early every country in the world causing generally mild variety of upper respiratory tract manifestations and in a minority of cases lower respiratory tract diseases (LRTI), was later called Covid-19[6]. On 11th March 2020, the World Health Organization (WHO) announced the Covid-19 outbreak as a pandemic, with the spread of infection in 114 nations and in excess of 4000 death toll[7]. Pakistan, a non-industrial country, positioned fifth among the world's densely populated nations, was viewed as the new Covid-19 area of interest with a divided fragile medical services framework. All circumstances and resources when considered, Pakistan has an extraordinarily challenging position because of its weak topographical location, as it shared borders with China and Iran and also because of constrained screening and quarantine facilities, prompting extremely compromised effectiveness of the preventive measures.

Pakistan's first case of Covid-19 was reported on 26th of February in Karachi, having a travel history of Iran[8]. CoV transmission has been affirmed to happen from human to human, and the infection is thought to spread through respiratory droplets when an individual coughs or sneezes[9]. The most well-known manifestations are fever, difficulty in breathing, sluggishness, cough and sore throat. Other uncommon clinical signs and symptoms include nasal blockage, rhinorrhea, pain abdomen and loose stools[9].

The most ideal approach to forestall the disease is to evade exposure to the infection by playing it safe by washing hands routinely with soap and water for in after an interval of 20 seconds, cover the nose and mouth with tissue or flexed elbow while coughing or sneezing, maintain a strategic distance from close contact (1 meter or 3 feet) with individuals who are sick, avoid contact of dirty hands with eyes, nose or mouth, remain at home and self-seclude from others if there should be an occurrence of feeling unwell[10]. The knowledge and practice regarding preventive strategies is of utmost importance among the physicians as well as among the medical students. A local publication on the medical undergraduate students enrolled in Combined Military Hospital Lahore Medical College identified adequate knowledge and awareness regarding COVID-19[11]. In an international publication most of the students used social media (83.4%) as a preferred source of information on COVID-19[12]. Maximum students believed that hand shaking (93.7%) are the primary mode of transmission. These findings were also seen in a study done among medical students in Nepal.

The progression of this pandemic can best be controlled by good preventive strategies. Knowledge regarding Covid-19 transmission and then its practical application is the need of the hour. Medical students form a vulnerable population firstly due to repeated exposure to patients in the ward and secondly due to later aggregation in the lecture theaters for the basic medical sciences lectures and tutorials.

The results of the study will help improve health education strategies, as well as to prevent the outbreak in the institution. Hence, preventing the intermittent breaks in learning process brought about by repeated closures of institutions as well as reducing the relentless burden on our weak health system.

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The objective of the study was to determine the knowledge and practice about Covid-19 among medical students of Lahore Medical and Dental College.

MATERIAL AND METHODS

A cross sectional study was carried out at LMDC, Lahore from February to April 2021 after obtaining approval from LMDC ethical review. The sample population included all consenting final year MBBS students after informed verbal consent. A total of 113 students took part in the study. Sampling technique used was non-probability convenience sampling. A structured questionnaire was used to collect data. It consisted of three sections. Section 1 pertained to socio demographic characteristics, while section 2 was based on questions regarding knowledge and section 3 consisted of questions regarding practice about Covid-19. Data entry and, analysis was done by using IBM SPSS version 21. Descriptive statistics were used to find the results, which were presented as tables consisting of frequency distribution and percentages.

RESULTS

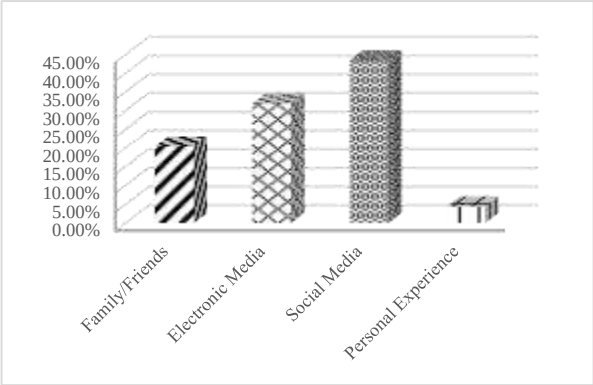
Background of Respondents: A total of 113 respondents took part in our study which included 48.7% males and 51.3% females. 77% students were day scholars. Other Socio-demographic variables are depicted in Table 1.

Table 1: Socio-demographicbBackground of respondents (n=113)

Variable	Frequency	%age
Gender		
Male	55	48.7
Female	58	51.3
Residential Status		
Stay in Hostel	26	23.0
Day Scholar	87	77.0
Pre-Entry Qualification		
F.Sc	86	76.1
A-Level	24	21.2
American Board	3	2.7
Father's Occupation		
Doctor	27	23.9
Non-Doctor	86	76.1
Mother's Occupation		
Doctor	13	11.5
Non-Doctor	100	88.5

Knowledge about COVID-19: 99.1% of the students were well aware of the Covid-19 pandemic. 99.1% students also knew that Covid-19 is a contagious disease while 96.5% correctly identified the causative agent. 84.1% respondents had correct knowledge regarding the incubation period of the disease. Different Sources of information about Covid-19 were reported as depicted in Figure 1. 73.5% respondents believed that everyone is equally susceptible to get infected with Covid-19.

Figure 1: Sources of information about Covid-19 (n=113)



32.7% thought elderly were more likely to be infected while 20.4% felt elderly with co-morbidities were more susceptible, while only 8.8% believed that infants and children are more susceptible. 0.9% only felt that pregnant women were more likely to be infected. 85.8% of the respondents correctly identified social gatherings as the main source behind spread of Covid-19. Knowledge of participants regarding most common symptoms of Covid-19 is shown in Table 2. Most participants were aware that shortness of breath, fever, cough, loss of smell and loss of taste are most common symptoms.

Table 2: Knowledge about symptoms of Covid-19 (N=113)

Symptoms	Frequency	%age
Fever	76	67.3
Cough	71	62.8
Sore throat	51	45.1
Shortness of breath	77	68.1
Body pain	51	45.1
Diarrhea	16	14.2
Constipation	4	3.5
Headache	32	28.3
Loss of smell	69	61.1
Loss of taste	61	54

Respondents were asked regarding effective measures against Covid-19. 77.9% identified social distancing, 13.3% identified using mask and gloves while 8.8% identified frequent hand washing/sanitizers. The participants were asked what they believed was the best source of information regarding Covid-19 as depicted in Table 3. When asked regarding effectiveness of thermal scanning in detecting Covid-19, 29.2% believed it was effective only if patient had fever, 26.5% responded yes and also 26.5 % thought may be; while only 17.7% responded no. 85.8% of the respondents believed Covid-19 vaccination is effective and 91.2% respondents planned to get infected as at the time of this study vaccination drive had merely just begun in Pakistan.

Table 3: Preferred source of information regarding Covid-19 (n=113)

Source type	Frequency	%age
Television	75	66.4
Telephonic dial tone	13	11.5
Friends or relatives	23	20.4
Print material	22	19.5
Internet	82	72.6
Other	3	2.7

Practice regarding Covid-19: According to the respondents 75.2% preferred home quarantine with medical advice. 14.2% preferred to stay home with all family members without medical advice and only 10.6% respondents believed to visit hospital if they get Covid-19 test positive. 46% of respondents did not adopt good practice of regular hand washing whereas 31.9% practiced hand washing after every hour, and 22.1% practiced after every half hour. 50.4% of the participants revealed that they visited places a few times and 17.7% avoided visiting crowded spaces. When asked regarding use of masks, 61.9% students used surgical masks, 29.2% used N95 masks while only 8.8% used a cloth mask. When asked regarding following government directed SOPs 64.6% said they complied with the SOPs, while 8% followed them occasionally and 27.4% admitted to not following SOPs.

DISCUSSION

The raging mammoth of Covid-19 pandemic has wreaked havoc globally. With novel variants of disease spurting up from various regions of the world to the failure of vaccination strategies; all has led to the growing concerns for the public health experts. The disease knowledge and the statistics regarding mortality and disease morbidity are changing every day. However, the continuous waxing and waning of the disease burden has paralyzed the health system around the world. No matter how

intricate the new advances in disease management are being discovered the unwavering significance of the disease prevention and control cannot be undermined in any situation.

Undergraduate medical students form a pivotal bridge between the general public and the health care community. They themselves are at high risk of developing the disease, as well as the key source of transmission of the disease to their family members and other staff. Moreover, they formulate the future health care workforce, hence their accurate knowledge regarding the disease and flawless practices regarding the prevention and control of the disease must be advocated on all grounds.

This study focuses on assessment of knowledge and practices regarding Covid-19 in undergraduate students of medical college. The results from this study were consistent with previous where 92.7 correctly identified the infectious nature of the disease, 97.2% correctly identified the incubation period and 88.1% correctly identified the viral origin of the disease[14]. Another similar study conducted in China[15] revealed similar results, where 91.5% correctly identified the duration of incubation period for Covid-19.

When inquired about the source of acquisition of knowledge regarding Covid-19 as it being a newly encountered disease while books and college curriculum lacked the very topics the results obtained were very much similar to the previous studies. Amongst our respondents, social media and electronic media were major sources of information regarding Covid-19. Less common sources were friends and family, print media and direct exposure. Previous literature showed 77.6% (14) believed that media coverage is the best source of information regarding Covid-19. Another similar study[16] revealed consistent results where 79% of the respondents believed that social media while 77% believed electronic media was the first-hand source of information. In another study[17], 68.6% received education about Covid-19, mostly from visiting the WHO website. One of the limitations of the study was failure to ascertain the role of medical school training as being the first and foremost source of information for students.

The assessment of knowledge of the medical students regarding susceptibility to Covid-19 revealed that a huge majority fairly realized that everyone is equally susceptible however 20.4% of the participants believed that adults with co morbidities are more susceptible than the rest of the population. As documented that adults with co morbidities especially diabetes mellitus and metabolic syndrome are more susceptible to the complications of Covid-19[18], hence the students in our opinion might have confused the susceptibility to disease acquisition and susceptibility to disease complication with each other.

The disease being viral in origin can manifest itself like any other viral disease ranging from the specific respiratory symptoms of cough, sore throat, dyspnea and all the signs and symptoms of pneumonia when localized only to the respiratory system. However, the non-specific symptoms include fever, myalgia, weakness and fatigue also occurs. The disease when become systemic can also cause diarrhea, loose stools, vomiting and other gastrointestinal symptoms. It can also lead to shock yet the common cause of mortality known to Covid-19 is ARDS Acute following Covid pneumonia. However asymptomatic disease is also known to exist. The proportion of asymptomatic patients ranged from 14.6% to 42%. Fever and cough were the known to be most common symptoms. According to the then known literature, fever ranged from 46% to 64.2% while cough was found in 32% to 55.9%. All other symptoms or signs including rhinorrhea, sore throat, headache, fatigue/myalgia and gastrointestinal symptoms including diarrhea and vomiting were infrequent, occurring in less than 10 to 20%. (19) Our study showed results consistent with previous studies showing a large number of respondents correctly identified the fever and cough being the most common signs and symptoms of Covid-19[14,15].

The most effective way to protect against Covid-19 is to adopt protective measures and better hygiene practice. The commitment to such measures can only be ensured when the adequate level of knowledge regarding their effectiveness and efficacy is inculcated among the medical students. An overwhelming majority of our respondents believed that social distancing is the best protective measure followed by wearing of masks and use of sanitizers. According to a similar study 92.2% believed that hand washing and personal hygiene can prevent Covid-19 transmission.78.8% believed that all persons in a society should wear mask and 89% believed that a surgical mask during coughing and sneezing can prevent the spread of respiratory droplets[17].

The influence of the core knowledge of the disease, its patho-physiology, treatment and prevention and control can only be fruitful if it reflects in the modification and improvement of our practices.

According to the previous study[17] nearly 89% of the participants cancelled meetings with friends, eating out and sports events, 91.6% of the individuals reduced the use of closed spaces such as libraries, theatres and cinemas, 95.4% of the participants avoided going to the crowded areas, 93% went shopping less frequently and 84% reduced the use of public transport whilst in our study only 50% of the individuals reduced going out.

One of the very significant prevention and control measure of Covid-19 is wearing of masks. According to the previous study[14], nearly 91% of the individuals have started to wear masks during the pandemic. There are various masks available in the market ranging from fabric masks triple layered to surgical mask and N95 masks. During regular use only surgical mask is sufficient to provide protection, N95 is only recommended during intubations or bronchoscopy. In our study, nearly 61% correctly used surgical masks during their regular college activities and during going out. However, the question of the correct use of type of masks puts another limitation to the study.

In contrast to previous literature[14], where nearly 96.6% of the respondents switched to adequate and frequent hand washing during Covid-19 pandemic, 46% our respondents failed to adopt adequate hand hygiene practices. The underlying reasons may not only be related to the lack of knowledge, the availability of hand washing facilities may also contribute to such poor percentage of practicing individuals.

Good general health including regular physical activity and good diet low in refined sugar and fatty food protects against Diabetes and obesity which in turn protects against Covid morbidity and complications. (20) Hence even more efforts should be directed towards life style modification and adoption of healthy practices than ever before. In our study a vast majority switched to healthy life style practices gradually.

However, the control of this deadly pandemic calls for persistent efforts and staunch commitment to the cause. The continuous refreshing of the knowledge and constant inspection and scrutiny of the practices should be implemented in order to make sure the efforts are not wasted.

At the time of our study, Covid vaccination drives had only just begin in Pakistan. Pakistan had a stepwise approach for vaccine administration, starting off with health care workers and those over 65 years in the first tier and then slowly trickling down to lower age groups. This past year has proven how effective vaccines have been against control of Covid-19.

We recommend conducting a multicentre study with much larger sample size including all healthcare students.

CONCLUSION

The medical students had adequate basic knowledge regarding the disease, electronic media and internet being the most common source of knowledge. The practices of mask wearing and adoption of healthy lifestyle were widely adopted yet the practice of hand hygiene and reduced social mobility was poorly conducted.

Conflict of interest: None

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