Perceived Barriers to Covid Testing

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Abstract

Objective: To determine the perception of medical students regarding the barrier toward Covid testing.

Method: It was a cross-sectional study enrolling 428 medical students (1st - 4th-year MBBS) through convenient sampling. After formal IRB approval, data was collected through google forms through WhatsApp groups from willing students. The data was compiled and analyzed by using SPSS software 26. The Chi-square test was applied to determine the relationship between the variables by keeping the study power at 80%.

Results. Out of 428 respondents, 301(70.3%) were females. The mean age of the participants was 21+3years. Out of all the participants, 127(29.7%) had a suspicion of covid, while 237(55.4%) had flu-like symptoms, and 122(28.5%) got themselves tested. Painful experience100(35%),37(13%) fear of side effects,207(72%)lack of guidance,135(47%)limited access, and 170(59%) cost were significant barriers toward covid testing. More than 50% agreed that social media's role was ineffective in spreading correct information.

Conclusion: The fear of getting a positive result, painful experience, side effects, cost, lack of awareness and access to the covid testing facility, fear of contracting the disease, lack of motivation, and poor role of social media in spreading awareness of covid testing were the significant barriers towards covid testing.

Keywords: Covid testing, PCR, fears, barriers.

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Introduction

The Centers for Disease Control and Prevention (CDC), on Jan 22, 2020, confirmed the first laboratory- case of novel Coronavirus.[1] So far, Coronavirus has affected 175,183,965 people around the globe and claimed 3,777,286 deaths.[1] The number of cases and the death toll is increasing, offered every possible effort is to delay or stop the spread of the pandemic.[2] The importance of detecting cases is essential through the testing for SARS-CoV-2.3 The PCR testing plays a pivotal role in active, asymptomatic cases detection, contact tracing, and knowledge of regional and national infection rates to inform the public health authorities.[1] Samples can be taken through nasal, nasopharyngeal, oral, and oropharyngeal routes. Its diagnostic accuracy varies from 32% to 93%depending upon the size and quality of the sample.[4] The first quantitative test for the early diagnosis and detection of SARS-CoV-2 was distributed worldwide in January 2020 by the WHO[1] The PCR testing plays a vital role in the early identification of infected cases and subsequent management of the patients and implementation of mitigation strategies for prevention of the spread of disease.[5] Despite its importance, availability, and efficacy, the general public has observed resistance to getting tested.[6] Pakistan's government also provides PCR testing facilities at multiple governments and private health facilities.[7] The only difference at these facilities is that the govern-

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ment setting is doing free-of-cost testing while the private is charging at a cost that is beyond the reach of an ordinary man.[7] It is a common observation that affording people are going for private testing after exposure as they do not want to face the hassle of government settings.[8] While it comes to the commoner, they will not go for testing but instead will be in denial of getting the infection. A possible reason for the spread of the disease.[7] In a country like Pakistan, where the literacy rate is 59% and monthly wage of an unskilled worker is less than Rs 15,000.,[9] It is unrealistic to expect that people will be going for Covid testing when exposed.

Moreover, several misconceptions and myths make people hesitant about taking these tests.[10] In some areas of Pakistan like other countries, COVID-19 is not accepted as a disease. Instead taken as "a government conspiracy". Most people are unaware of public and private institutes where PCR testing is available in different cities.[11] Furthermore, tests done in government sector laboratories are considered unreliable. Some people are simply afraid of testing positive as a stigma. In contrast, others are afraid of the procedure of PCR.[12] Moreover similar trend seems prevalent in developing countries even though they have well-developed health systems. Many people are unaware of the importance of PCR testing in controlling the spread of this disease.[12] So, the rationale of this study is to determine the perception of the medical student regarding the barrier to covid testing. The study results will help fill the knowledge gaps and identify the areas that need behavior change through health education.

Material and Methods

It was a cross-sectional study enrolling 1st-4th year MBBS students of Central Park Medical College. The study was completed in 6 months duration. Through a convenient sampling technique, data collection was done. After taking the IRB approval(CPMC/IRB-No/1273) and informed consent, MBB S students from 1st -4th year willing to participate in the study were asked to complete a structured questionnaire. However, the 4th-year MBBS student conducting the research project were excluded from the study. Using the WHO sample size calculator to keeping the prevalence at 50%, the calculated sample size was 385 medical students. All medical students fulfilling the inclusion criteria and giving consent were enrolled. The students were asked about their year of discipline and perception of the factors which act as a barrier to Covid testing through a struc-tured questionnaire disseminated to the medical students through a WhatsApp group using an online google proforma. The response time was one week

Once the data was collected, the compiled excel sheet from online google pro forma was transferred to SPSS software version 26 for further analysis. Means and standard deviations were calculated for quantitative variables like age, while frequencies of each variable were calculated. The Chi-square test was applied to determine the relationship between the variables. Data were presented as frequencies tables. The significance level was set at 95% ($p < 0.05$) and the power of the study at 80%.

Results

Out of 428 respondents, 301(70.3%) were females. The mean age of participants was 21±3years. Out of all, 127 (29.7%) had a suspicion of covid, while 237(55.4%) had flu-like symptoms, and 122(28.5%) got themselves tested (Table -1). More than half feared getting positive after Covid testing(Table-2) (p=0.001). Considering barriers, 100(35%) said it was painful, 37(13%) had a fear of side effects,207(72%) (p=0.000) had a lack of guidance,161(56%)(p=0.037) considered unawareness of the location of the covid testing center, 135(47%) (p= 0.027) said limited access. Fifty percent considered that they might get an infection from the covid center. One hundred and thirty-three

Table 1: *Frequency distribution of experience of covid infection and testing*

Responses	Yes n(%)	No n (%)	Not sure n(%)
Suspicion of Covid infection during the past year	127(29.7)	198(46.3)	103(24.1)
Experience of Flue like symptoms during the past year	237(55.4)	158(36.9)	33(7.7)
Thought of getting Covid tested	123(28.7)	288(66.6)	17(4)

(46%) and 170(59%) (p= 0.002) said that the covid test was unreliable and costly (Table-2). Lack of motivation was significantly asso-ciated with not getting themselves tested(Table-2). More than 60% agreed that social media played a nega-tive role in spreading correct information about covid testing(Table-2).

Table 2: *Cross Tabulation between the Thought of Getting Tested and different Barriers*

Variables	Responses	Thought of getting Covid (PCR) tested			
		No n(%) 288(67)	Not Sure n(%) 17(4)	Yes n(%) 123(29)	p-value
Fear of side effects	No	210(73)	8(47)	94(76)	0.000**
	Not sure	41(14)	7(41)	6(5)	
	Yes	37(13)	2(17)	23(19)	
Lack of motivation	No	116(40)	3(18)	68(56)	0.001**
	Not sure	40(14)	7(41)	16(13)	
	Yes	132(46)	7(41)	39(32)	
Fear of getting positive	No	68(24)	9(53)	15(12)	0.001**
	Not sure	35(12)	2(12)	12(9.8)	
	Yes	185(64)	6(35)	96(79)	
Cost	No	88(31)	8(47)	30(25)	0.002**
	Not sure	30(10)	6(35)	15(12)	
	Yes	170(59)	3(18)	78(63)	
Lack of knowledge of COVID testing Centers	No	57(20)	6(35)	18(15)	0.037*
	Not sure	24(8.4)	4(24)	14(11)	
	Yes	207(72)	7(41)	91(74)	
Limited access to the locations	No	105(37)	3(18)	49(40)	0.027*
	Not sure	48(17)	8(47)	23(19)	
	Yes	135(47)	6(35)	51(42)	
Lack of role of social media	No	75(26)	6(35)	29(24)	0.012*
	Not sure	40(14)	7(41)	25(20)	
	Yes	173(60)	4(24)	69(56)	
Unawareness of the location of Covid centers	No	71(25)	5(29)	34(28)	0.103
	Not sure	56(19)	7(41.2)	31(25)	
	Yes	161(56)	5(29)	58(47)	
Acquisition of Covid infection from vaccination center	No	85(30)	6(35)	34(28)	0.68
	Not sure	54(19)	4(24)	30(24)	
	Yes	149(52)	7(41)	59(48)	
Reliability issues	No	77(27)	5(29)	35(28)	0.85
	Not sure	78(27)	6(35)	30(25)	
	Yes	133(46)	6(35)	58(48)	
Painful experience	No	117(41)	7(41)	51(42)	0.28
	Not sure	71(25)	7(41)	24(20)	
	Yes	100(35)	3(18)	48(39)	

Significant results **Highly significant

Discussion

The research was conducted among the medical students at Central Park Medical College (CPMC) to determine medical students' perceptions regarding the perceived barriers to covid testing. Of the 428 responses, 55.4% thought they experienced flu-like symptoms during the past year. The literature shows that Flu and Covid -19 are highly contagious respiratory infections with similar symptoms.[13] Mostly, people getting the Covid infection develop flu-like symptoms, which lead to confusion about whether to go for Covid PCR testing or not.[13] The results from studies around the globe suggest that only people with good health-seeking behavior can perhaps get themselves tested; this observation is not generalizable.[14] The high false-negative results and general reliability issues have been the leading cause

of making people hesitant to get themselves tested.[12] Furthermore, the casual attitude of public both in developed and underdeveloped countries has been the main reason for the spread of disease.[15] People getting flu-like symptoms acceptability issues exists toward covid infec-tion.[13] Furthermore, the results of the current study showed that only 28.5% of people got themselves tested for COVID 19 when they developed symptoms. The reason for this small percentage might be the lack of awareness. It is worth emphasizing that people from the western world also have the same behavior as depicted in our results. However, they generally have vital scree-ning programs that help in contact tracing.[8] Generally public avoids unnecessary testing due to common ailments.[10] Even in developed countries, people lack cautious behavior towards others at work and in society.[16] Individuals generally perceive that flue usually subsides on its own. They have faulty attributes like eating or drinking, which leads to sore throat or flue. Even if they have Covid infection, they will remain in the phase of denial.[17]

Our participants (35%) believed that the Covid Testing procedure was painful. Many studies suggest that the nasal and oropharyngeal specimens taken for PCR testing are painful procedures. Thorough nasal or oropharyngeal brushing are required to decrease false-negative results.[4] Moreover, the specimen-taking procedure can lead to a less painful experience when explained before-hand and taken by an expert.[18] The results of our study indicate that 13% of respondents feared the side effects of PCR.[10] It is seen in different studies that a semi-skilled or unskilled person taking a PCR specimen can result in side effects ranging from nose bleeding to a cerebrospinal fluid leak.[4] Another documented factor identified is the uncooperative behavior of the patients.[4] In numerous studies, people feared PCR testing due to many misconceptions.[17] Health awareness through different portals should be ensured for the general public regarding the steps of PCR specimen collection.[19] More-over, assurance of proper training of staff involved in specimen collection to avoid such complications.[2]

Another critical barrier in our results was the lack of knowledge regarding the testing center's location in public and private settings. Our results show that more than half of the respondents believe there is a gap in knowledge regarding the availability of covid testing facilities among the general public. The barrier of limited access is one of the major hindrances to getting tested.[20] The cost of PCR testing is one main barrier to getting tested. The government of Pakistan, like many developed countries, has provided free-of-cost Covid testing facilities at some hospitals in major cities of the states.[11] Standing in long queues waiting to get tested in designated facilities is usually discouraged by our people, even if it is free of cost.[11] Moreover, people lack a sense of responsibility in getting tested. Furthermore, another barrier was the fear of getting the infection from the testing laboratories. Globally the fear of getting an infection among people has been aggravated during the pandemic.[1] Statistics have shown that the disease can spread when Standard Operating Procedures (SOPs) are not followed at the testing laboratories and during home sample collection.[14]

Moreover, false-negative results also contributed to lack of motivation to get themselves tested. More than half of our participants thought that PCR testing was a costly procedure. The government hospital provides a free-of-cost testing facility but has long waiting hours, while private laboratories charge heavy amounts.[11] Perhaps an individual whose average daily income is less than a dollar will be reluctant to spend money on a screening test. Therefore, getting tested by government laboratories will be the least priority.[9] Therefore, Pakistan's government should provide reliable testing facilities at more centers and regulate the testing charges at private laboratories.[7] It is worth emphasizing here that health awareness should be created among our general public so that they can avail themselves free of cost PCR testing from the designated centers of the government of Pakistan.[7] Moreover, the information provided by social media regarding the importance of covid testing is not effective in minimizing the fears. Perhaps it has been instrumental in creating false information and fears among the general public.[12] Social media should play a pivotal role in removing myths regarding covid testing19.[19,20] In this way sense of responsibility can be created among the general public that it is their responsibility to get themselves tested to curtail the spread of infection.[20]

Conclusion

The fear of getting a positive result, painful experience, side effects, cost, lack of awareness and access to the covid testing facility, fear of contracting the disease, lack of motivation, and poor role of social media in spreading awareness the covid testing were the significant barriers towards covid testing.

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References

1. World Health Organization. Coronavirus disease (COVID-19). [Accessed on Jun 2, 2021]. Available at: https://apps.who.int/iris/bitstream/handle/10665/336034/nCoV-weekly-sitrep11Oct20-eng.pdf
2. Pakistan N. COVID-19 Health Advisory Platform by Ministry of National Health Services Regulations and Coordination. (2020). [Accessed on Jun 25, 2021]. Available at:https://covid.gov.pk/stats/Punjab
3. World Health Organization. Modes of transmission of the virus causing COVID-19: implications for IPC precaution recommendations: scientific brief, Mar 29, 2020. World Health Organization; 2020. [Accessed on Jun 25, 2021]. Available at: https://www.who.int/ news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions
4. Sule WF, Oluwayelu DO. Real-time RT-PCR for COVID-19 diagnosis: challenges and prospects. Pan Afr. med .j .2020;35(Suppl 2).
5. Floriano I, Silvinato A, Bernardo WM, Reis JC, Soledade G. Accuracy of the Polymerase Chain Reaction (PCR) test in the diagnosis of acute respiratory syndrome due to Coronavirus: a systematic review and meta-analysis. Revista da Associação Médica Brasileira. 2020 Aug 24; 66:880-8.
6. Khalid A, Ali S. COVID-19 and its Challenges for the Healthcare System in Pakistan. Asian.Bioeth.Rev. 2020 Dec;12(4):551-64.
7. Noreen N, Dil S, Niazi S, Naveed I, Khan N, Khan F, etal., COVID 19 pandemic & Pakistan; limitations and gaps. Global Biosecurity. 2020 May 21;1(4).
8. Literacy rate, adult total (%of people age 15 and above). [Accessed on Jun 11, 2021]. Available at https:// data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=PK
9. Work and wages. [Accessed on Jun 11, 2021]. Available at https://wageindicator.org/labour-laws/labour-law-around-the-world/minimum-wages-regulations/ minimum-wages-regulations-pakistan
10. Czubak J, Stolarczyk K, Orzeł A, Frączek M, Zatoński T. Comparison of the clinical differences between COVID-19, SARS, influenza, and the common cold: A systematic literature review. Adva..Clin.Exp.Med. 2021;30(1):109-14.
11. Christensen SW, Dagyaran I, Bernild C, Missel M, Berg SK. Testing for COVID-19 regulates behavior in the general population: A qualitative study of experiences awaiting test results for COVID-19. Scand.J. of Public Health. 2021 Mar 15:1403494821993717.
12. Föh B, Borsche M, Balck A, Taube S, Rupp J, Klein C, etal., Complications of nasal and pharyngeal swabs: a relevant challenge of the COVID-19 pandemic?. Eur. Respir.J. 2021 Apr 1;57(4).
13. Kent C. Different paths to the same destination: screening for Covid-19. Verdict medical devices. 2020. [Accessed on May 4, 2021]. Available at: https:// www.medicaldevice-network.com/features/types-of-covid-19-test-antibody-pcr-antigen/#:~: text=By%20scaling%20PCR%20testing%20to,a%20disease%20like%20Covid%2D19
14. Binnicker MJ. Challenges and Controversies to Testing for COVID-19. J.Clin.Microbiol. 2020 Oct 21; 58(11): e01695-20.
15. Bossuyt PM. Testing COVID-19 tests faces methodological challenges. J.Clin.Epidemiol. 2020 Oct 1; 126:172-6.
16. Katz MH. Challenges in testing for SARS-CoV-2 among patients who recovered from COVID-19. JAMA Internal Medicine. 2020 Nov 12.
17. Ogbebor O, Min Z, Cheema T, Bhanot N. COVID-19: Diagnostic Testing and Challenges. Crit. Care. Nurs.Q . 2020 Oct 1;43(4):343-8.
18. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y,etal., Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The Lancet. 2020 Feb 15; 395(10223):497-506.
19. Honeyman R, Richa C. Does the COVID-19 test hurt?. [Accessed on May 14, 2021] Available at: https:// www.getroman.com/health-guide/does-the-covid-19-test-hurt/
20. Parsons Leigh J, Fiest K, Brundin-Mather R, Plotnikoff K, Soo A, Types EE,etal., A national cross-sectional survey of public perceptions of the COVID-19 pandemic: Self-reported beliefs, knowledge, and behaviors. PloS one. 2020 Oct 23;15(10):e0241259.

Authors Contribution

HA: Conceptualization of Project
HA, FA, JA, HA: Data Collection
HA, JA, HA: Literature Search
FA,JA: Statistical Analysis
FA, HA: Drafting, Revision
HA: Writing of Manuscript