



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.3879128>

Available online at: <http://www.iajps.com>

Research Article

KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT TELEMEDICINE DURING COVID-19 PANDEMIC AMONG MEDICAL STUDENTS OF PUNJAB PAKISTAN

Faiqa Amin, Iqra Tahir, Anoosha Yousaf
Quaid-e-Azam Medical College, Bahawalpur

Article Received: April 2020

Accepted: May 2020

Published: June 2020

Abstract:

Introduction: Telemedicine is the delivery of health care services where distance is a critical factor by all health care professionals for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries. During the Covid-19 pandemic, telemedicine is bridging the gap between people, physician and health care units while at the same time maintaining social distancing.

Objective: The objective of the study is to determine the knowledge, attitude and practice about telemedicine during Covid-19 pandemic among medical students of Punjab, Pakistan.

Methodology

Study setting: The study was carried out among medical students of different medical colleges of Punjab, Pakistan. Students of 12 medical colleges were included. **Study Design:** Cross-sectional observational descriptive study. **Duration:** 2nd April 2020 to 15th May 2020. **Sample size:** 200 students. **Data collection:** A predesigned and pretested questionnaire was used for the collection of data in this research. The questionnaire consisted of two parts. In first part questions about bio data were asked and in second part questions about the actual research were asked after taking their verbal consent. **Data analysis:** Data was analyzed manually. Frequencies were calculated; also tables were made. **Results:** Survey revealed that 95% of the participants knew about telemedicine and 93% believed that it can be used to provide health services during Covid-19 pandemic. Regarding services of telemedicine 54% of participants had idea, but only 34% knew about training courses. About 70% agreed that patient's examination, management, investigation and follow up can be done through telemedicine. Survey revealed that 91% of participants think telemedicine is revolutionary for health care provision and 92.5% thought it can save lives during pandemic. About 92.5% were willing to take telemedicine courses and 88% believed telemedicine training should be made compulsory.

The study revealed that 74% of participants thought that telemedicine is practical in developing country like Pakistan. Only 20% received any health services via telemedicine during pandemic. 80.5% believed that telemedicine services are feasible and convenient. About 35.5% found the process difficult to understand. 20% found it effective and 2% did not find it effective. Most, i.e. 94.5% would like to recommend this service to others. **Conclusion:** All participants had adequate level of knowledge and positive attitude towards telemedicine thus if appropriate measures are taken the use of telemedicine can bring positive changes in health care provision during this pandemic situation.

Keywords: Telemedicine, Covid-19 pandemic, Knowledge, Attitude, Practice, Medical students.

Corresponding author:

Faiqa Amin,

Quaid-e-Azam Medical College, Bahawalpur

QR code



Please cite this article in press Faiqa Amin et al, Knowledge, Attitude And Practice About Telemedicine During Covid-19 Pandemic Among Medical Students Of Punjab Pakistan., Indo Am. J. P. Sci, 2020; 07(06).

INTRODUCTION:

As we all know the COVID-19 virus has wreaked havoc within the health care system, telemedicine is stepping into the spotlight and bringing a useful change in the provision of health care at a time when social distancing is necessary.

Innovational technology development has caused various changes in every sector; medical science is not an exception. New technologies have impact on the improvement of medicine and the way to deliver different medical services [1].

The field of information and communication technology (ICT) is providing medical services including telemedicine [2]. Use of ICT for the improvement of patient's outcome by increasing access to medical information is termed as telemedicine [3].

WHO defined telemedicine as, "delivery of health care services where distance is a critical factor by all health care professionals for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries" [4, 5].

Taking into account the facts, WHO established an e-Health at 58th World Health assembly in May 2005.

Adoption of telemedicine relies mainly on knowledge, attitude and practice of telemedicine among health care professionals and medical students. It is important to understand the factors which play an important role in acceptance of telemedicine technologies by medical students during the pandemic era [6].

Nowadays, telemedicine is making a very positive contribution to health care during the pandemic situation. It is bridging the gap between people, physician and health care units while at the same time maintaining social distance [7]. It is enabling everyone, especially the symptomatic patients, to stay at home and communicate with the physician through vital channels, thus helping to reduce the spread of virus [8]. Therefore, the objective of the study is to assess the knowledge and practice about telemedicine during COVID-19 pandemic among medical students of Punjab, Pakistan, so that the results may help in future planning of awareness campaign.

Medical students are considered to have more knowledge and awareness of both technology and health care and thus a more positive approach towards telemedicine.

Through this undergraduate study it is rational for students in the field of public health care to develop

their approach towards telemedicine services during this era of pandemic.

METHODOLOGY:

Study Setting: The study was carried out in medical students of different medical colleges of Punjab, Pakistan. Students of 12 medical colleges were included.

Study Design: Cross-sectional observational descriptive study.

Duration: 2nd April 2020 to 15th May 2020.

Sampling population: Medical student from 1st year to 5th year of different medical colleges during study period were included.

Sample size: sample was 200 students.

Sampling technique: stratification.

Inclusion criteria: Willing students including both genders.

Exclusion Criteria: unwilling students.

Ethical issues: informed consent was taken from all participants (verbal).

Data collection: A pre-designed and pre-tested questionnaire was used for the collection of data in this research. The questionnaire consisted of two parts. In first part questions about bio data were asked and in second part questions about the actual research were asked after taking their verbal consent.

Data analysis: data obtained from questionnaire was analyzed manually. Frequencies were calculated; also tables and figures were made.

RESULTS:

In this study, a sample of 200 students from 12 medical colleges of Punjab was taken. The survey revealed that 95% of the participants knew about telemedicine and 93% of the participants believed that it can be used to provide health services in the global pandemic of Covid-19. On asking about the services and fields of application provided by telemedicine, 54% of the participants had an idea about them. The survey revealed that only 34% of participants knew about the training courses given at their hospital/college. Majority of the participants, i.e. 70 % were aware that patient's examination, management, investigation and follow up can be done through telemedicine during the pandemic.

Our study further revealed that 91% of participants agreed that use of telemedicine is revolutionary for health care provision in the present global pandemic of Covid-19. Most of the participants i.e. 92.5% thought that telemedicine can save lives at the time when going to hospital can be potentially risky for exposure to Covid-19. Majority of the participants i.e. 92.5% were willing to take courses in telemedicine and 88% respondents believed that such training should be made compulsory for health

care professionals. More than half of the participants, i.e. 74% thought that use of telemedicine is practical in developing country like Pakistan where ample resources and access to technology are not available everywhere.

Furthermore, it was revealed that only a small portion of respondents i.e. 20% received health care services through telemedicine, whereas 80.5% of the

participants found telemedicine feasible and convenient. When asked about difficulty in understanding the process of telemedicine, only 35.5% found it difficult. Regarding the effectiveness of telemedicine, 78% hadn't used it while 20% found it effective and 2% did not find it effective. Most of the participants i.e. 94.5% would like to recommend this service to others.

Table 1 Knowledge of Respondents about Telemedicine during Covid-19 Pandemic (n=200)

Statement	Yes	No
Know about telemedicine	95% (n = 190)	5% (n = 10)
Know telemedicine can be used to provide health services in global pandemic	93% (n = 186)	7% (n = 14)
Know about services and field of application covered by telemedicine	54% (n = 108)	46% (n = 92)
Have an idea of training courses for telemedicine given at their hospital/college	34% (n = 68)	66% (n = 132)
Know that patient's examination, management, investigation, and follow up can be done through telemedicine during pandemic	70% (n = 140)	30% (n = 60)

Table 2 Attitude of Respondents about Telemedicine during Covid-19 Pandemic (n=200)

Statement	Agree	Disagree
Use of telemedicine is revolutionary for health care provision in the present global pandemic of Covid - 19	91% (n = 182)	9% (18)
Telemedicine can save lives at the time when going to a hospital can be potentially risky for exposure to Covid - 19	92.5% (n = 185)	7.5% (n = 15)
Would be willing to take a course in telemedicine	92.5% (n = 185)	7.5% (n = 15)
Training and use of telemedicine should be made compulsory for all health professionals	88% (n = 176)	12% (n = 24)
Use of telemedicine is practical in a developing country like Pakistan where technology might not be available for everyone	74% (n = 148)	26% (n = 52)

Table 3 Practice of Respondents about Telemedicine during Covid - 19 Pandemic (n = 200)

Statement	Yes	No	Have not used any telemedicine services
Have received health care services through telemedicine	22% (n = 44)	78% 9 (n = 156)	-
Found telemedicine service feasible and convenient	80.5% (n = 161)	19.5% (n = 39)	-
Found any difficulty in understanding the process of telemedicine	35.5% (n = 71)	64.5% (n = 129)	-
Use of telemedicine has been beneficial	20% (n = 40)	2% (n = 4)	78% (n = 156)
Would recommend this service to others	94.5% (n = 189)	5.5% (n = 11)	-

DISCUSSION:

The study was carried out to assess the awareness and attitude of medical students regarding the use of telemedicine to provide health services during the global pandemic of Covid-19. A total of 200 students from 12 medical colleges of Punjab were interviewed. The results were compiled and then compared with the researches carried out in Karachi, Taxila, Bangladesh, China, West Bengal and North West Ethiopia.

Detailed analysis revealed that 95% respondents knew about telemedicine. It was similar to a study conducted in Dhaka, Bangladesh where 99.5% respondents had knowledge of telemedicine [6]. About half of the respondents (54%) knew about the services and fields of application covered by telemedicine, which is similar to a study conducted in Taxila, Pakistan where 67% respondents knew about the services provided through telemedicine [9]. Majority of respondents (93%) knew that telemedicine can be used to provide health services during a pandemic. This was similar to the study conducted in Dhaka Bangladesh, where 79% respondents were aware that telemedicine can be used to provide health services during natural and man-made calamities [6].

As far as the training courses are concerned, only 34% respondents had an idea that such courses were being provided by their health institute. The study in Taxila, Pakistan showed contrasting results where 100% respondents knew about the courses [9]. More than half of the respondents (70%) had knowledge about the use of telemedicine to manage, examine, investigate and follow up patients. A similar study conducted in Dhaka, Bangladesh showed that 62.5% respondents agreed that telemedicine could be used to manage patients, 12.5% agreed that examination

could be done, 51% thought that investigations could also be done, while 69.5% believed that follow up of the patients was also possible [6].

The efficient use of telemedicine by health care providers and consumers requires training and proper guidance by experienced people. In our study, 92.5% of the respondents were willing to take a training course in telemedicine, which is similar to the study conducted in Dhaka, Bangladesh where 82% agreed and 6.5% strongly agreed that they were willing to take such a course [6]. Majority of the respondents (88%) believed that training and use of telemedicine should be made compulsory for all health professionals since it has become the need of the hour. It was also similar to the study conducted in Dhaka Bangladesh where 52.5% respondents agreed and 32% strongly agreed that health care providers should be trained to use telemedicine [6]. Pakistan is a developing country where large proportion of population does not have access to technology and education. However, in our study, more than half of the respondents (74%) agreed that use of telemedicine is practical in Pakistan. This was in contrast to a study conducted in Karachi, Pakistan where 90.6% people thought that poverty and lack of education were the major barriers in use of telemedicine [3].

Another major issue regarding the use of telemedicine is that many people have adequate knowledge, but its practice is limited. Ever since the start of the pandemic, only 22% respondents had utilized the telemedicine services, which was similar to a research conducted in China before the pandemic, where only 12.8% respondents had received health services via telemedicine [10]. Despite its limited use, most of the respondents (80.5%) considered the services feasible and

convenient, which is similar to a study conducted in West Bengal where 68% respondents found the use of telemedicine convenient [5].

Some respondents (35.5%) had difficulty in understanding the process of telemedicine similar to a study conducted in North West Ethiopia, where 42.1% agreed and 18.5% strongly agreed that the concept of telemedicine was difficult to understand [1]. Most of the respondents (94.5%) agreed to recommend the use of telemedicine to others like the study conducted in West Bengal, where 66% respondents agreed to it [5].

From our study it is evident that medical students should be given proper training regarding the use of telemedicine, since this pandemic has made social distancing necessary and going to a health facility can be a potential risk for exposure to Covid-19 and thus, should be avoided. Online courses should be provided by medical colleges to increase knowledge and provide necessary skills to students which will be helpful in their careers and also for the society.

CONCLUSION:

All participants had adequate level of knowledge and positive attitude towards telemedicine thus if appropriate measures are taken the use of telemedicine can bring positive changes in health care provision during this pandemic situation.

REFERENCES:

1. Biruk K, Abetu E. Knowledge and attitude of health professionals toward telemedicine in resource-limited settings: a cross-sectional study in North West Ethiopia. *Journal of healthcare engineering*. 2018;2018. <https://www.hindawi.com/journals/jhe/2018/2389268/abs/>
2. Zayapragassarazan Z, Kumar S. Awareness, knowledge, attitude and skills of telemedicine among health professional faculty working in teaching hospitals. *Journal of clinical and diagnostic research: JCDR*. 2016 Mar;10(3):JC01-JC04.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4843285/>
3. Ashfaq A, Memon SF, Zehra A, Barry S, Jawed H, Akhtar M, Kirmani W, Malik F, Khawaja AW, Barry H, Saiyid H. Knowledge and Attitude Regarding Telemedicine Among Doctors in Karachi. *Cureus*. 2020 Feb;12(2):e6927

4. David B. Assess the knowledge regarding telemedicine among staff nurses in selected hospitals of Indore p,M.P. *International journal of advance research, ideas and innovations in technology*. 2018 May;4(3).
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7065727/>
5. Dey I, Bhattacharya S. Knowledge and Perception of Telemedicine among Post Graduate Students of a Tertiary Hospital Of West Bengal. *IOSR Journal of dental and medical sciences*. 2016 June;15(6):8-11.
<https://pdfs.semanticscholar.org/1ee9/03216d142f46f23215b90674ef201862f5e4.pdf>
6. Eshita DI. Knowledge and Attitude of The Physicians Toward Telemedicine. *Global scientific journal*. 2017 Dec;5(12):85.
<https://pdfs.semanticscholar.org/d21f/83cbd9b10d6fe6c3178a7024153d04ce13a2.pdf>
7. Mohiuddin AK. Tele-Pharmacists in Pandemic Situations of Bangladesh. *Journal of medical and clinical studies*. 2020 April;3(1):134.
https://www.pubtexto.com/article_pdf/7/457/pubtexto_7_457_22042020122738.pdf
8. Portnoy J, Waller M, Elliott T. Telemedicine in the Era of COVID-19. *The Journal of Allergy and Clinical Immunology: In Practice*. 2020 Mar 24.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7104202/>
9. Kamal SA, Hussain S, Shafiq M, Jahanzaib M. Investigating the Adoption of Telemedicine Services: An Empirical Study of Factors Influencing Physicians' Perspective in Pakistan. *The Nucleus*. 2018 Nov 30;55(3):153-63.
<http://thenucleuspak.org.pk/index.php/Nucleus/article/view/289>
10. Chen P, Xiao L, Gou Z, Xiang L, Zhang X, Feng P. Telehealth attitudes and use among medical professionals, medical students and patients in China: A cross-sectional survey. *International journal of medical informatics*. 2017 Dec 1;108:13-21.
<https://www.sciencedirect.com/science/article/abs/pii/S1386505617302320>

ANNEXURE

Name:

Age:

Gender:

Year of Medical College:

Institution:

1. Do you know about telemedicine?
Yes/No
2. Do you know about the services and fields of application covered by telemedicine?
Yes/No
3. Do you know telemedicine can be used to provide health services in global pandemic
Yes/No
4. Do you have any idea that training courses for telemedicine are being given at your hospital? Yes/No
5. Do you know that patient's examination, management, investigation and follow up can be done through telemedicine during pandemic?
Yes/No
6. Do you think the use of telemedicine is revolutionary for health care provision in the present global pandemic of Covid-19?
Yes/No
7. Do you think telemedicine can save lives at the time when going to hospital can be potentially risky for exposure to Covid-19?
Yes/No
8. Would you be willing to take a training course in telemedicine?
Yes/No
9. Do you think the training and use of telemedicine should be made compulsory for all health professionals?
Yes/No
10. Do you think the use of telemedicine is practical in a developing country like Pakistan where technology might not be available for everyone?
Yes/No
11. During the pandemic, have you or your family member received health care treatment through telemedicine?
Yes/No
12. Do you find telemedicine service feasible and convenient?
Yes/No
13. Do you find any difficulty in understanding the process of telemedicine?
Yes/No
14. Has the use of telemedicine been beneficial for you?
Yes/No
15. Would you like to recommend this service to your friends?
Yes/No