

ORIGINAL ARTICLE

Awareness of Tele Rehabilitation Among Physiotherapy Students of a Teaching University: A Cross-Sectional Study

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ABSTRACT

Aim: To assess the awareness of tele rehabilitation among physiotherapy students of a teaching university.

Study design: A cross-sectional study

Place and Duration: Institute of Physiotherapy and Rehabilitation Sciences LUMHS Jamshoro from August to December 2021

Methodology: In this study data was collected from the 250 students of physiotherapy. Non probability convenience sampling technique was used to check the awareness among physiotherapy students and future possibilities of Tele rehabilitation. Data was analyzed by statistical package for the social science (SPSS) version 22.

Results: In this study 250 physiotherapy students participated. Male participants were 40 (16%) and female participants were 210 (84%). A total of 192 (76.8%) students had knowledge/awareness about Tele rehabilitation and 58 (23.2%) had no knowledge. In this study female participants had more awareness (62%) as compared to male participants (22%).

Conclusion: We found that majority of the study participants had a knowledge about the tele rehabilitation while female participants were more aware than male participants regarding tele rehabilitation

Keywords: Awareness, Tele Rehabilitation, physiotherapy, students

INTRODUCTION

New technologies have had great effect on different aspects of human life.¹ One of the leading area of technology in health care system is telehealth. Telehealth refers to the use of electronic data and telecommunications to assist long-distance clinical health care, patient and professional health-related education, and health management. It is the provision of health care using a range of telecommunication instruments, such as telephones, cellphones, and mobile wireless devices, with or without a video connection. Telehealth rehabilitation is a very new and expanding area.²

Tele rehabilitation includes different specialized fields such as tele assessment, tele consultation, tele therapies which meet the therapeutic needs of different rehabilitation areas.³ Some examples include remote monitoring of blood pressure, blood glucose, and activity levels using electrical devices for consultations that are conducted through video conferences from patients home instead of travelling to clinics/hospital. For elderly people it deals with the quality of life, independent living and provide cost effective services.⁴ They can be classified as store and forward mode in which information is recorded and stored for later time and hybrid mode which is combination of two modes mentioned earlier.⁵

Modern technological and telecare facilities have made physician and other health care providers to monitor patient remotely.^{6, 7} Remote monitoring might range from simple phone assistance to external or implant table gadgets.⁸

The use of telephonic ECG monitoring at home has been recommended as a substitute for outpatient visit to the hospital.⁹

Tele rehabilitation has raised many concerns and questions among stakeholders in the Philippines, including patients, physicians, administrators, and educators, about its various aspects of implementation and consequences.¹⁰ Tele rehabilitation has been taught to medical interns rotating in the department of Rehabilitation Medicine at Philippines General Hospital since 2017.¹¹

According to a clinical scale of arm movement ability, patients who got robot-assisted therapy recovered faster than those who received a fake exposure to the robot. A second investigation found that these relative improvements in the robot group were sustained after a three-year follow-up.¹²

Chronic stroke patients who used this gadget for a two-month active-assist therapy regimen improved their arm movement. 1314 Although constraint-induced and robot-assisted

therapy are unlike in many ways, they both rely on the patient practicing functional movements intensively and repeatedly, with continuing input from the therapist or robotic equipment. Our working premise is that the fundamental stimulus of observed healing in both therapy is intensive, guided practice. This notion is supported by several other studies that have found that repetitive movement practice improves arm and hand movement skills after a stroke.^{15, 16}

In response to the unequal situation created by COVID 19, which prohibited face-to-face interactions, the Department of Rehabilitation Medicine at PGH devised a variety of short-term strategies to bridge the gaps in its three arms, namely service, training, and research, by utilizing tele rehabilitation. The three limbs that have historically made up the department were temporarily paralyzed when the epidemic struck, but they soon found common ground in tele rehabilitation.¹⁷

Our purpose of study was to find out and assess the approach of tele rehabilitation among Physiotherapy students who are studying in different universities/institutes of Hyderabad

METHODOLOGY

This cross-sectional study was conducted at Institute of Physiotherapy and Rehabilitation Sciences LUMHS Jamshoro by Non probability convenience sampling technique from August to December 2021. A total of 250 students of physiotherapy were included in the study. Medical student and students of BDS were excluded from the study.

Data collection process require a written informed consent which is signed by participants before assessment. The method is to assess the awareness of tele rehabilitation among Physiotherapy Students through a questionnaire. It requires a form which has questions related to experience of students of tele rehabilitation. We had note down the results on assessment sheets of each participant who was observed / who filled the form. Data was analyzed by using SPSS (Statistical Package for Social Sciences) version 22.

RESULTS

In this study 250 physiotherapy students participated. Male participants were 40 (16%) and female participants were 210 (84%). A total of 192 (76.8%) students had knowledge/awareness about Tele rehabilitation and 58 (23.2%) had no knowledge. In this

study female participants had more awareness (62%) as compared to male participants (22%). These proportions were found statistically significant at p value 0.03. A total of 22% of participants knew about definitions, half the students (51.2%) had some information; only 3.2% of them had experience of Tele rehabilitation, but 23.2% of participants had no any information about tele rehabilitation.

Most of the students learned about Tele rehabilitation from social media (59.8%) followed by workshop/seminars (6.7%), lectures (29.1%) and hospital practice (4.1%). Majority of the students 206 (82.4%) did not use Tele rehabilitation, 44(17.6%) of them had ever used it. Majority of the participants (76.8%) reported that a patient can take benefit through Tele rehabilitation and 5.2% of participants reported that a patient cannot take benefit. Only 30(12%) of students reported to have taken any consultation through Tele rehabilitation, but majority of participants 220(88%) did not take any consultation. Thirty-nine 15% of participants reported their relatives had taken benefit through Tele rehabilitation. 14.8% of participants reported that Tele rehabilitation will have side effects on patient's perceptions. Thirty-two participants strongly agreed that inclusion of Tele rehabilitation in therapy would improve the quality of patient care followed by agree (146) and Disagree (14). Majority of participants (85.2%) preferred physical consultation over Tele rehabilitation (4.8%). Female students (13.6%) preferred more Tele rehabilitation as compared to male students (1.2%). A total of 24% of students reported that Tele rehabilitation is valid tool for the current health care set up, followed by significant (71.8%), non-significant (2.6%) and strongly non-significant (1.5%). Majority of the participants (82.2%) reported that awareness of Tele rehabilitation has increased in COVID-19. In this study, population awareness from Tele rehabilitation before and after COVID-19 has found significant differences p value 0.001. More than half the participants (59.4%) reported that lack of knowledge is the main barrier in using Tele rehabilitation followed by technical issue (27.6%), staff skill issue (6.7%) and high cost (6.2%). Participants satisfaction from Tele rehabilitation was reported as strongly satisfied 33 (17.6%) satisfied 82 (42.7%), not satisfied 60 (31.3%), strongly not satisfied 17 (8.9%)

Table 1: How much do you know about Tele rehabilitation?

Tele rehabilitation knowledge	Frequency	Percentage
Definition (23%)	56	22.4%
Some information (50%)	128	51.2%
Experience (75%)	08	3.2%
No any information (0%)	58	23.2%
Total	250	100%

Table.2: How do you learn about tele rehabilitation?

Tele rehabilitation knowledge	Frequency	Percentage
Lecture	56	29.1%
Workshop/seminar	13	6.7%
Hospital practice	08	4.1%
Social media	115	59.8%
Total	192	100%

Table.3: Do you think that a patient can take benefit through Tele rehabilitation?

Awareness	Males	Females	P value
Yes	32(12.8%)	160(64%)	
No	08(3.2%)	50(2%)	0.001
Total	40(16%)	210(84%)	

Table 4: Which thing will you prefer among following?

Preferences	Tele rehabilitation	Physical consultation	P value
Males	3(1.2%)	37(14.8%)	
Females	34(13.6%)	176(70.4%)	0.04
Total	37(14.8%)	213(85.2%)	

Table.5: Tele rehabilitation is valid tool for the current health care set up? (n = 192)

Preferences	Frequencies	Percentages
Strongly significant	46	24%
Significant	138	71.8%
Non-significant	05	2.6%
Strongly non-significant	03	1.5%
Total	192	100%

Table.6: Population awareness from Tele rehabilitation before and after COVID-19. (N =92)

Preferences	Before COVID-19.	After COVID-19.	P value
20%-50%	22(11.4%)	60(31.2%)	
50%-100%	12 (6.2%)	98(51%)	0.001
Total	34(17.6%)	158(82.2%)	

DISCUSSION

The goal of this study is to give the awareness of tele rehabilitation in physiotherapy to the students of doctor of physiotherapy from first year to final year. A total of 16% males and 84% females participated in this study.

In our study 76.80% are those participants which are aware about tele rehabilitation and 23.20% which are unaware about it. In comparison with other countries like in Nigeria the study was conducted in that study there were only 39% of students who have positive attitude that questionnaire was also forwarded to North Gujrat area and only 54% of population were aware about tele rehabilitation.¹⁸ The results were shown that the uses of tele rehabilitation are limited in the North Gujrat. Another survey was conducted in South Africa that survey reveals very little tele rehabilitation in the university department.¹⁹ Patient related use of information and communication technology is limited to the telephone or E-mail for patient appointments no use is made of video conferencing or web based application for patient care.²⁰ Response rate was poor so in this country for tele rehabilitation to be successfully implemented there needs to be more awareness of tele rehabilitation.

The strength of this study is that awareness of Tele rehabilitation was observed in physiotherapy students for first time, Questionnaire was carry to understand for all students and the results came out to be positive which bring awareness of tele rehabilitation to students. The limitations of our study is that it was only carried out in physiotherapy students. This was a single city study so further studies should be carried out in other universities of Pakistan.

CONCLUSION

We found that majority of the study participants had a knowledge about the tele rehabilitation while female participants were more aware than male participants regarding tele rehabilitation

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