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Awareness And Attitude Of Physiotherapy Students Towards Telerehabilitation In National Capital Region

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Abstract

This article discusses the awareness and attitude of physiotherapy students towards Telerehabilitation in the national capital region is a quantitative approach with a descriptive cross-sectional survey design.

Background: *Telerehabilitation is a formative platform for patients' health in most developing nations; it is remarkably increasing its use for enhancing rehabilitation, and it is widespread in most countries evidently; nevertheless, this research is in limited numbers among physiotherapy students; therefore, this study brings information regarding this scenario.*

Objectives: *To assess physiotherapy students' awareness and attitude towards telerehabilitation using awareness and attitude questionnaires and to find the relationship between them.*

Method: Based on a quantitative approach and a descriptive cross-sectional survey design. The convenience sampling technique was used on the entrant, who was studying at one of the NCR region's selected universities.

Tools and techniques: demographic proforma, awareness questionnaire, and attitude questionnaire, respectively, on telerehabilitation

Result: *Using descriptive and inferential statistics, this present study had 301 undergraduate students, and only 3 were postgraduates. The study revealed that 92.4% of students had prior knowledge of telerehabilitation services. The study reported that 98.4% of participants had good awareness and attitudes toward telerehabilitation, and the majority of participants had a positive attitude (92.4%). This study additionally detected the correlation between awareness and attitude scores using Spearman's rho test. However, there was no relationship between them.*

Conclusion: *The study concluded that a more significant proportion of students have good awareness and a positive attitude toward telerehabilitation, but indicated that there was no relationship between awareness and attitude*

Keywords: *NCR - National Capital Region, ICT- Information and communication Technology, TR- Telerehabilitation, IT- Information technology.*

1.INTRODUCTION

Technology has become familiar, and it has already dawned in a variety of ways, enabling medical rehabilitation to be delivered with favorable characteristics from the facility of innovative high-level rehabilitative assessment by using technology to provide authentic interventional services using telerehabilitation platforms (1).

With the invention of ICT (information and communication technology), telemedicine was introduced first, and telerehabilitation has become a branch of telemedicine. While this branch is relatively new, however, its application in developing countries has now expanded rapidly(2). Its use makes medical professionals aware of the need for successful implementation in clinical practice since telerehabilitation is a potential medium to strengthen the current model of physiotherapy services. According to the American Telerehabilitation Association, telerehabilitation is a process in which therapeutic services are provided through the use of information and communication technologies to all clients, regardless of their age. A variety of professionally qualified therapists and specialists in the therapeutic field help shape rehabilitation services (1). This delivery also enables rehabilitation services in remote areas through communication and information technology. A variety of services are provided by Telerehabilitation, such as therapy interventional training, telemonitoring accessibility, development training activities, consultations, and networking tools for people with disabilities. The ease with which a patient can connect with a facilitated specialist, as well as its liability, practicability, and high efficacy ranges for both the service users and the clinicians, are all advantages of using telerehabilitation, for it offers a high range of services (3). By doing so, many patients receive consultation and treatment from a convenient location. Telerehabilitation platforms are more cost-effective and cheaper than traditional methods of care delivery. The needy or communities that are marginalized from the mainstream, as well as developing countries, are benefiting from the services in terms of their availability, and through the online platform, such as activity therapeutic videos and materials, accessibility is also provided. The utilization of telerehabilitation has long been experienced in different urgencies and situations but will be considerably outpaced in 2020

due to the pandemic; nevertheless, telerehabilitation's utilization and engagement between caregiver and client can be increased in several ways (4).

ICT is currently a part of our everyday lives as a convenient and user-friendly intervention that may have a wide range of uses. Telerehabilitation enabled us to deliver digitized health care with the use of a variety of technologies, which further aided in a wide range of rehabilitation services, such as review, examination, evaluation, prevention, treatment, monitoring, education, consultation, and coaching. (5)

Patients living in rural areas where conventional health facilities may not be readily available benefit from this technology due to its cost comparison with one-on-one treatment. Nonetheless, some drawbacks of telerehabilitation, including patient cynicism due to remote contact with their rehabilitators, should not be overlooked (2). Despite assorted challenges regarding platform, organization, technical networking, and the interrelated variety of humans (6). The incorporation into remote medical monitoring systems allows for the collection, analysis, and training of data in real-time, automatically gaining understanding and making predictions on the patient's state. This is made possible by the swift development of artificial intelligence (AI)-associated methodologies with the use of a machine learning-based approach (7). Taking into account any pertinent medical, clinical, functional, environmental, and personal backgrounds, the healthcare practitioner can use this information to develop a telerehabilitation strategy that is suitable for the patient's needs (5). These factors aid us in changing the health sector and providing people with long-term outpatient therapy. During the early days, networking limited the resources to connect with people, which is possible today through these platforms. Further, the innovation of smartphones and broadband connections (9) (10) helps with flexible telerehabilitation interventions. (11) (12)(13)

In light of the above, it is seen that only a few studies have been done globally and even in India regarding telerehabilitation. Hence, the present study is conducted to get more extended information on the awareness and attitude of physiotherapists regarding telerehabilitation, as this study would be helpful in the future studies. (4)

2. METHODOLOGY

Study design, setting and study population

An online descriptive cross-sectional study was done with the purpose of assessing the awareness and attitude toward Telerehabilitation among physiotherapy students in the NCR region of Noida. UP

Selection and description of participants: only physiotherapy students, between the ages of 18 and 30, from the selected colleges in the NCR region were included in the study. The data for the study was gathered from the following institutions or universities: Galgotias University, Noida International University, Sharda University, Amity University, and Kailash Institute of Nursing and Para-Medical Science. Noida, UP.

Participants were given written informed consent after the sample was selected based on the sampling criteria. From February 25 to May 15, 2022, the researcher collected data from physiotherapy patient

Sample size and sampling technique

The minimum sample size for the study was 200, which was further finalized to be 304; the samples were selected based on a convenient method.

Tools and techniques- Data collection

The information was collected through an online Google Form that was emailed to the students' email addresses or phone numbers. The demographic pro forma, an awareness questionnaire on telerehabilitation, and an attitude scale on Telerehabilitation were the instruments employed in the study. There were 11 multiple-choice items on the awareness questionnaire. The awareness questionnaire was arbitrarily scored as follows: low awareness: 1-3, moderate awareness: 4–7, and high awareness: 8–11. A five-point Likert scale served as the basis for the attitude measure. The measure had 11 statements with positive and negative questions; the responses for the positive items were either strongly agree (5), agree (4), neutral (3), disagree (2), or severely disagree (1). Similar ratings were given for the negative items: strongly agree (1), agree (2), neutral (3), disagree (4), and strongly disagree (5). The minimum and highest scores given were 11 and 55, respectively, and Spearman's rho was used to describe the correlation between the awareness questionnaire and attitude scale on Telerehabilitation.

Statistical analysis

The demographic pro forma was described using frequency and percentage for descriptive data. On the other hand, the awareness and attitude scores were assessed using the mean, standard deviation, frequency, and percentage calculations.

Table 1 Frequency and percentage distribution of sample characteristics (n= 304)	
Sample Characteristics	**n** (%)
Age in years	
18-19	18 (5.9%)
20-21	89 (29.3%)
22-23	103 (33.9%)
24-26	94 (30.9%)
Gender	
Male	153 (49.7%)
Female	151(50.3%)
Degree course/Department	
Galgotias University, Greater Noida.	200(65.8%)
Noida International University, Greater Noida.	37 (12.2%)
Kailash Institute of Nursing and Paramedical Sciences, Greater Noida.	4 (1.3%)
Sharda University, Greater Noida. Amity university	25(8.2%) 38(12.5%)
Degree level	
Undergraduate	301 (99%)
Postgraduate	3 (1%)
Year of study	
1st-year undergraduate	43 (14.4%)
2nd-year undergraduate	15.9%
3rd-year undergraduate	26.6%
4th-year undergraduate	42.8%
1st-year postgraduate	1(0.1%)
2nd-year postgraduate	2 (0.2%)
Awareness about platforms of Telerehabilitation such as webcams, videoconferencing, phone lines, and videophones?	
Yes	281 (92.4%)
No	23 (7.6%)
If yes, how did you get to know about Telerehabilitation?	
Lecture/seminar/workshops	38 (12.5%)
Internet	175 (57.6%)
Hospital/ practice	23(7.6%)
Other (friends/colleagues)	57(18.8%)

The Spearman correlation coefficient was utilized to determine the link between attitude and awareness. The p-value cutoff for statistical significance was established at 0.05. The Statistical Package for Social Science (SPSS) 16.0 version was used to calculate the data.

RESULTS

Sample characteristics:

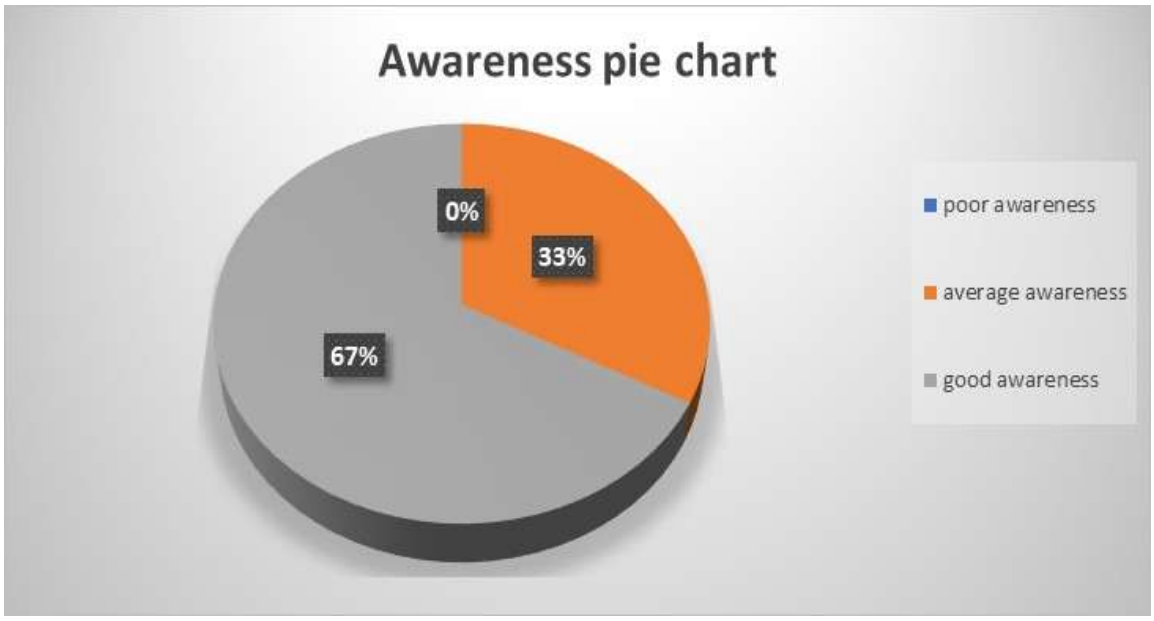
The majority of participants were in the 22–23 age group (33.9 %). Nearly equal numbers of men and women participated in the study. Galgotias University had 200 of the students who participated with 65.8% of all participants. The vast majority of participants were undergraduates 301 (99.0%), and the majority of fourth-year students 130. (42.8 %). Students in greater number 281 (92.4 %) were familiar with Telerehabilitation. The majority of students 175 (57.6 %) were prior aware of Telerehabilitation, through the internet services.

Awareness on Telerehabilitation

It was determined that 204 (67.1 %) participants had good awareness, 100 (or 32.9 %) had average awareness, and none had poor awareness of Telerehabilitation.

Figure 1: Pie chart of frequency percentage of awareness towards Telerehabilitation amongst the physiotherapy students in the NCR region.

N=304



Attitude of the participants

A higher percentage of participants 299 (98.4%) had a positive attitude towards Telerehabilitation, while only 5 participants had negative attitude 1.6

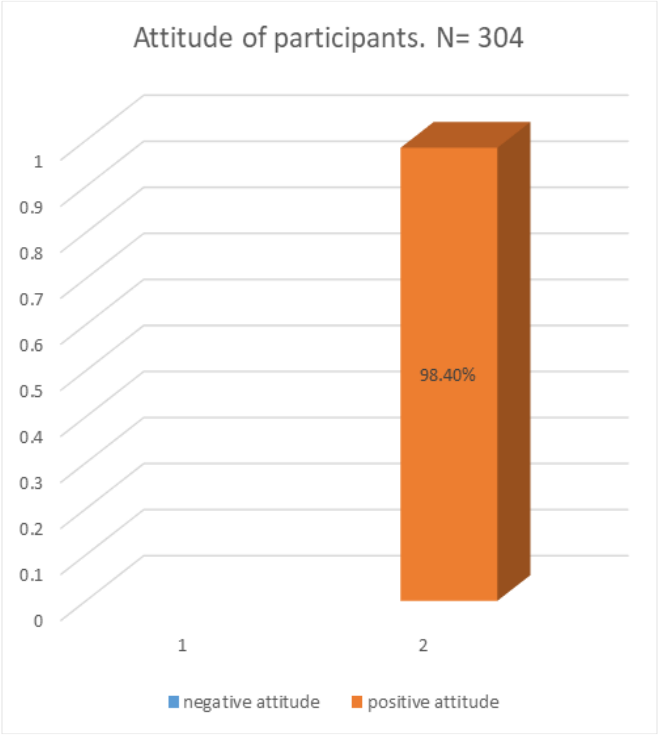


Figure 2: Bar diagram on frequency percentage of attitude towards Telerehabilitation.

Correlation between awareness and attitude.

In this study no relation found was between awareness and attitude.

DISCUSSION

An investigation among physiotherapy students in Nigeria [1] and Saudi Arabia [4] revealed that the majority of participants knew about Telerehabilitation, with 76.5 % and 58.8 %, respectively, The present study revealed that 92.4 % of students also knew about Telerehabilitation services out of which 57.6% is alone from the source of the internet itself, than lectures/seminars, other (friends/colleagues, and then hospital. Whereas the Nigerian students indicated that prior awareness of Telerehabilitation platforms came primarily from their education (61.4 %), and then from lectures, workshops, and seminars. The hospitals showed inadequate information regarding the prior knowledge of Telerehabilitation. Our study also showed the least awareness of Telerehabilitation from hospital sectors. we may infer that young people in our developing nations are increasingly experimenting with these digital platforms because they want to keep up with advancements in information technology in more developed environments. Because of this, rather than the classroom, social media, and the online learning platform were where physiotherapy students in this research first learned about Telerehabilitation. Therefore more lectures, research, hospital practices, and, paper advertisements may allow more students who are still not known with this platform to its accessibility [1].

Additionally, a study from Gujarat found that the use of online platforms like Skype, Video calls, and conferencing could be replaceable from traditional venues for physiotherapists to conduct clinical applications of Telerehabilitation [15]. The majority of the students in our present study also showed access to the Internet to learn about Telerehabilitation, as was demonstrated in the study; it can also be inferred that students being at aged 18-26, are more curious to attain information regarding Telerehabilitation through the Internet as it is convenient.

Awareness and attitude regarding Telerehabilitation

The present study highlighted that 204 (67.1%) participants had good awareness, participants with average awareness were 100 (32.9%), and participants who had no awareness were 23 (7.65%). In the study in Nigeria [1], the participants had average awareness of 86 (43%), and good awareness of 82 (41%). Another study from Gujarat supported that the participants had good awareness. [14]

In the present study, the majority of participants had a positive attitude, 299 (98.4%), and in Northwest Ethiopia, a study showed that the majority, 285 (69.9%), of health professionals had a positive attitude towards telerehabilitation-based treatment services. [15] , while the study in Nigeria contradicted the results, which showed the negative attitude of 122 (61%), and a positive attitude of 78 (39%).

Correlation

In our study, there was no relationship found between the awareness and attitude variables, although one study found a significant correlation between awareness and attitude variables in Nigeria [1]

CONCLUSION

This study found that a greater proportion of physiotherapist professional students have good awareness and a positive attitude towards Telerehabilitation. A majority of students knew about telerehabilitation through the Internet. It is suggested that students get direct exposure to various Telerehabilitation platforms through clinical practices such as clinical postings or through real-time lectures or clinical demonstrations on Telerehabilitation to strengthen their awareness and increase their knowledge about Telerehabilitation. The importance of this study is to increase its use and promotion, as only a few studies have been done globally and even in India regarding Telerehabilitation. Hence, this study is conducted to get extended information on the awareness and attitude of physiotherapists regarding Telerehabilitation, as this study would be helpful in future studies.

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