

# Awareness and Expectations of Telerehabilitation among Physiotherapists of Ahmedabad

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## ABSTRACT

**Background:** Telerehabilitation is the delivery of rehabilitation services via information and communication technologies to the patients. Some of these services include therapeutic interventions, remote monitoring of progress, consultation, training and a means of networking for People with Disabilities. The impact ranges from patients easy access to specialist facilitation of care and low cost to clinician entered benefits. Information technology knowledge and utilization seems to be less explored in health sector. This study was aimed to assess the awareness and expectations of telerehabilitation among physiotherapists

**Purpose:** In next generation of any profession or discipline uptake of telerehabilitation can be enhanced when they have positive attitude towards its utilization. Therefore, there is a need to evaluate the awareness and expectations of telerehabilitation among the physiotherapists

**Methodology:** A survey was done utilizing originally developed questionnaire focused on telemedicine services, mostly rehabilitation with the prior permission of the author. The respondents where the UG & PG students, clinicians, academicians.

**Results:** 95.42% physiotherapists think telerehabilitation refers to use of information and communication technologies to provide rehabilitation services to people remotely in their home or other environment. 89.54% think telerehabilitation services include therapeutic intervention, remote monitoring of progress, consultation, training and a means of networking for people with disabilities. 83.78% think telerehabilitation enables clinicians to remotely engage & deliver patient care outside

of medical setting, thus eliminating the issue of distance between clinician and patient.

**Conclusion:** The academicians, clinical therapist and the students are having good awareness about telerehabilitation. Knowledge of Telerehabilitation is more profound in clinicians as well as academicians but comparatively less in the students.

**Keywords:** Tele-rehabilitation, knowledge, awareness, healthcare, remote rehabilitation assistance

## INTRODUCTION

In recent years, with development and enhancement in each and every aspect of intelligence technology has also revolutionized many aspects of medical rehabilitation, and one of the main paradigms of this is the recent advances in the medical field through the means of telerehabilitation.

Telerehabilitation is described by American Telemedicine Association as the delivery of rehabilitation services via information and communication technologies.<sup>[1]</sup> Clinically, this term encompasses a range of rehabilitation services that include assessment, monitoring, prevention, intervention, supervision, education, consultation, and counseling to the adults and children by a broad range of professionals is redefining the rehabilitation landscape and services.<sup>[1]</sup>

Telerehabilitation is been practiced now a days by all most all the medical fraternities Many health disciplines have

integrated telehealth in the healthcare delivery of all the different fields as in these disciplines include medicine, nursing, rehabilitation, physiotherapy, pharmacy, pediatrics, cardiology & ophthalmology.<sup>[2]</sup>

Tele-physiotherapy is the development of tele-monitoring systems to facilitate independent rehabilitations of patients within their own homes (Fook et al., 2008). This method of rehabilitation is suitable for patients who live at a distance and therefore find it difficult to attend clinic regularly due to time factor and the cost of transportation (Nelson et al., 1995; WHO, 2003). There is a growing body of research to demonstrate that image-based technologies, like people that employ videoconferencing, have been successfully used for the remote diagnosis and treatment of patients and these technologies present the most effective means for physiotherapists to provide services at a distance (Delaplain et al., 1993)

Some of these services include therapeutic interventions, remote monitoring of progress, education, consultation and training and a means of networking for People With Disabilities.<sup>[4]</sup>

The positive aspects of telerehabilitation are easy access of medical specialist to the people at any time and any place or at any distance.

Telerehabilitation has its main benefit in making the medical world interconnected with each other such that even opinions, advices or discussions from other countries medical specialists is also now easily available through any online mode like skype, videochats etc.

The main concept of telerehabilitation is to carry out the treatment of the patients through the mode of e-communication from the medical experts and the patients side as if they are on the same place even though distanced by miles.

Trials in tele-physiotherapy, which usually involve delivering a treatment from a remote location, have generally been more successful, producing similar results to

interventions that are delivered face to face. Many of PT interventions, which typically involve goal setting, exercise prescription and self-management training, do not require hands-on therapy and are highly amenable to tele-physiotherapy.<sup>[5]</sup>

Telerehabilitation has many potentials to uplift the physiotherapy field by providing e-services to the patients and special to those who are deprived of visiting the physiotherapy clinics in person. Available articles have reviewed about the acceptability, attitude, use of telerehabilitation among the physiotherapists. The hope for the upcoming generation is to continue to develop and use new, innovative technologies that can transform the current practices and can make telerehabilitation as an integral part of the treatment.<sup>[1]</sup>

Telerehabilitation is of utmost benefit for the patient's suffering from acute stage of any diseases by substituting the long distance travelling or any face to face approach. Quick management of any injury or diseases is very important to improve the self-efficacy of the patients Hence we can say that telephysiotherapy has now been getting explored in almost all the fields ranging from restricted range of motion to fitness almost all the aspects of the physiotherapy can be provided via e-mode to any patient regardless of the distance between the patient and the doctor.

Tele-physiotherapy is a virtually based physiotherapy treatment provided to the patients irrespective of time, place etc. The greatest benefit of telerehabilitation can be provided to the cardiac rehabilitation patients were a constant check can be kept by the special therapists virtually of all the vitals

In past 2 years the government has imposed several rules to save the people of nation from falling ill in the pandemic of COVID-19 and so the social distancing has become mandatory to reduce covid-19 pandemic this has become a barrier for the physiotherapists which usually have to maintain close distance between the

therapists and the patients for the treatment, postponing the treatment is not been a satisfactory response from the therapists to the patients suffering from pain and disability. Over here the telerehabilitation has played a very important role where the patients had got their treatment during the pandemic with the help of the online guidance provided by the physical therapists

### **Clinical Evidence of Telerehabilitation**

Several systematic reviews and meta-analytical studies have assessed the efficacy of telerehabilitation following total arthroplasty (e.g., shoulder, knee, hip) and upper limb interventions (such as proximal humerus fractures, carpal tunnel release surgery, rotator cuff tear).<sup>[6]</sup> Within this context, findings are promising as outcomes commonly considered in postsurgical physical therapy (e.g., reduction in pain intensity and improvements in range of movement, strength of the muscles, functional activities, and disability) are similar or even superior in comparison with face-to-face usual care.<sup>[6]</sup>

### **Opportunities of Telerehabilitation**

Recent advancements in information and communication technology have made low-cost internet connections, smart devices and related applications (such as Skype) available to a large segment of health care professionals and patients.<sup>[7]</sup> At multiple levels (Figure), user-friendly design of interfaces opens opportunities to the community of physical therapists to individualize the delivery of Musculoskeletal care by telerehabilitation in conjunction with face-to-face usual care. These opportunities are especially evident during the COVID-19 pandemic.<sup>[6]</sup>

Patients can gain benefits from telerehabilitation, such as (1) An early discharge from rehabilitation units, (2) immediate access to outpatient rehabilitation services, reducing costs and saving time, (3) and improvements in health outcomes and quality of life and an early return to work. <sup>[7-8]</sup>

Students are the next generation of any profession or discipline and the use of telerehabilitation can be increased when the upcoming physiotherapists are aware and have positive expectations for the telerehabilitation.<sup>[1]</sup> Therefore there is a need to evaluate the awareness and expectations of telerehabilitation among the physiotherapists of Ahmedabad.

### **MATERIALS AND METHODOLOGY**

The cross sectional study was done among 158 physiotherapists of Ahmedabad, Gujarat. A pre-prepared questionnaire with the prior permission of the author to use the questionnaire was taken to evaluate the awareness and the expectations of the telerehabilitation amongst the physiotherapists.

135(85.4%) females and 23 (14.6%) male participated in our study.

This study employed survey method using an online survey. The inclusion criteria which were set priorly at the beginning of the study were: the Therapists were eligible to participate if they were BPT, MPT, Academician, Clinical physiotherapists working in Ahmedabad, Gujarat.

The participants were given the online survey form and were requested to forward the link to their colleagues as appropriate, thus sourcing additional participants whom I could not have been able to approach directly hence a snowball type of sampling technique was taken in use for collection of the samples. This broad approach to recruitment was used to recruit therapists working across Ahmedabad. The survey was available to the participants for 3 months.

The items were scored using whether the therapists agree or disagrees to the asked questions,

The questionnaire considered 3 domains: demographic data, awareness questions and questions regarding expectations of telerehabilitation.

### Statistical Methods

Descriptive statistics of frequency, percentage, mean and standard deviation were used to summarize the data of each different class of physiotherapists i.e. whether BPT, MPT, Academicians and Clinicians who agrees or disagrees to the respective question was evaluated using Microsoft Excel version 2019

### RESULTS

There were 85.4% Female participants and 14.6% male participants as the ratio of female physiotherapists in Ahmedabad is more the female participants were more compared to male. FIG.1 shows the gender of the respondents. The mean age of the participants was 23.42 whereas majority of the participants were from the

age group of 22-26. The participants were from the age group of 22-39.

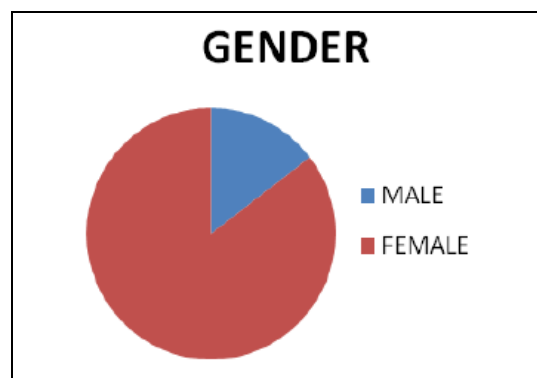


Figure 1: gender of the participants

### Awareness about Telerehabilitation

Most of the respondents were aware about the telerehabilitation platform. Table:1 shows the awareness of telerehabilitation among physiotherapists.

Table: 1 Awareness about Telerehabilitation (N=158)

Sr.no.	Questions	Agree n (%)	Disagree n (%)
1	Do you think telerehabilitation refers to use of information and communication technologies to provide rehabilitation services to people remotely in their home or other environment?	146 (95.42%)	7(4.58%)
2	Do you think telerehabilitation services include therapeutic intervention, remote monitoring of progress, education, consultation, training and a means of networking for people with disabilities?	137(89.54%)	16(10.46%)
3	Do you think telerehabilitation is same as telemedicine?	55(36.67%)	95(63.33%)
4	Do you think telerehabilitation involves PT & OT only?	43(28.29%)	109(71.71%)
5	Do you think telerehabilitation enables patients to take control of their management unlike face to face clinical approach?	96(63.16%)	56(36.84%)
6	Do you think telerehabilitation cuts down the associated travel costs and time spent travelling for both the healthcare provider & patient?	135(90.00%)	15(10.00%)
7	Do you think telerehabilitation enables clinicians to remotely engage & deliver patient care outside of medical setting, thus eliminating the issue of distance between clinician and patient?	124(83.78%)	24(16.22%)
8	Do you think telerehabilitation will save travelling time and money for obtaining an expert opinion?	136(90.07%)	15(9.93%)
9	Do you think telerehabilitation will benefit only urban community?	61(39.87%)	92(60.13%)

### Expectations Characteristics of the Respondents

Table: 2 Expectations about Telerehabilitation (N=158)

Sr.no	Questions	Agree n (%)	Disagree n (%)
1	Do you think telerehabilitation should be implemented in all hospitals?	121(80.13%)	30(19.87%)
2	Do you think feedback should be sent after each session to aid the use of telerehabilitation?	141(93.38%)	10(6.62%)
3	Do you think network availability in remote areas should be enhanced for telerehabilitation to be functional?	138(95.17%)	7(4.83%)
4	Do you think patient- clinician acceptability of telerehabilitation is needed or should be improved?	141(94.63%)	8(5.37%)
5	Do you think Confidentiality, patient privacy, abuse of use by patient, internet fraud & quackery should be minimized to zero	123(83.67%)	24(16.33%)
6	Do you think telerehabilitation should be included in university curriculum & various platforms such as workshops, seminars etc.?	137(91.33%)	13(8.67%)

### DISCUSSION

This study was aimed to evaluate the awareness and expectations of telerehabilitation among the

physiotherapists of Ahmedabad. It can be considered that the respondents might be aware of the information and technology advantages and disadvantages either through

mobile apps, computer systems or any other modes or gadgets. Current students are among the first generation of “digital natives” who are well versed in the incorporation of technology into social interaction and are well positioned to apply advances in communications to patient management [9]

Use of digital platforms like skype, facetime, video conferencing can become the main platform for clinical application of the tele-rehabilitation for the physiotherapists.

Majority of the participants of our study believes that tele-rehabilitation is the emerging branch and should be included in the curriculum in order to prepare them for the confident future clinical practice.

While many of the participants also responded that they cannot rely on tele-consultation and hence tele-consultation cannot take place of physical face to face assessment. Majority of participants expects to share a feedback form after each physiotherapy session.

Pahwa P et al (2018) in a mini review study discussed about the role of tele-physiotherapy for cerebral palsy children in school settings and found that tele-physiotherapy for cerebral palsy children is effective mode of treatment in developing motor skills.[10]

A Systemic Review and meta-analysis study by Van Egmond M et al (2018) showed the effectiveness of physiotherapy with tele-rehabilitation on postoperative functional outcome and quality of life in surgical patients and the study concluded that Physiotherapy with tele-rehabilitation has potential to increase quality of life and is feasible but less equally effective as usual care in surgical patients.[11]

Odole A et al (2014) in their study investigated effect of a 6-week tele-physiotherapy program on quality of life (QoL) of patients with knee osteoarthritis. 50 patients with knee OA were randomly and equally assigned into two treatment groups: clinic group (CG) and tele-

physiotherapy group (TG) and the researchers evaluated that Tele-physiotherapy using telephone medium improved QoL in patients with knee OA comparable to clinic based treatment.[12]

In our study many of the physiotherapists do not agree to the point how the tele-rehabilitation can benefit or ease their work both effectively and efficiently. The thought of diagnosing the patient online and not face to face gets them difficult to get convinced

## CONCLUSION

Physiotherapists of Ahmedabad are having good awareness and high expectation for future telerehabilitation applications. Knowledge of Telerehabilitation is more profound in clinicians as well as academicians but comparatively less in the students.

**Future Implications:** Telerehabilitation is found as a promising alternative tool to the face-to-face approach treatment. Physiotherapists can discover, use when and how telerehabilitation can be useful in daily basis.

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## REFERENCES

1. American Telemedicine Association. 2010: A Blueprint for Telerehabilitation Guidelines.
2. Mbada C.E · Baderinwa T.A. · Sanuade C.T. · AdemoyegunAdekola B.· Clara Fatoye · LamindeMaikudi ·Francis Fatoye: Awareness, Attitude and Expectations of Physiotherapy Students on Telerehabilitation
3. Odole A, Odunaiya N, Ojo O, Afolabi K. Tele-physiotherapy in Nigeria: perceived challenges by physiotherapists to its implementation. International Journal of Telemedicine and Clinical Practices. 2015;1(2):186.

4. Theodorus D, Russell T. Telerehabilitation: current perspectives. *Stud Health Technol Inform.* 2008;131:191-209
5. Holland A. Telephysiotherapy: time to get online. *Journal of Physiotherapy.* 2017;63(4):193-195
6. Andrea Turolla, Giacomo Rossettini,, AntonelloViceconti, AlvisaPalese, Tommaso Geri Musculoskeletal Physical Therapy During the COVID-19 Pandemic: Is Telerehabilitation the Answer?
7. Galea MD. Telemedicine in rehabilitation. *Phys Med RehabilClin N Am.* 2019;30:473–483.
8. Howard IM, Kaufman MS. Telehealth applications for outpatients with neuromuscular or musculoskeletal disorders. *Muscle Nerve.* 2018;58:475–485
9. Pathipati AS, Azad TD, Jethwani K. Telemedical Education: Training Digital Natives in Telemedicine. *J Med Internet Res.* 2016;18(7):e193.
10. Pahwa P, Mani S. Telephysiotherapy as a Mode of Enhancing Motor Skills of Cerebral Palsy Children in School Settings: A Review. *Journal of Exercise Science and Physiotherapy.* 2018;14(2):16-21.
11. Van Egmond M, van der Schaaf M, Vredeveld T, Vollenbroek-Hutten M, van Berge Henegouwen M, Klinkenbijn J et al. Effectiveness of physiotherapy with telerehabilitation in surgical patients: a systematic review and meta-analysis. *Physiotherapy.* 2018;104(3):277-298.
12. Odole A, Ojo O. Is Telephysiotherapy an Option for Improved Quality of Life in Patients with Osteoarthritis of the Knee?. *International Journal of Telemedicine and Applications.* 2014; 2014:1-9.

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