



# LEVEL OF SATISFACTION AND THE CHALLENGES FACED BY THE INDIAN PHYSIOTHERAPISTS DURING TELEREHABILITATION AMIDST COVID-19 PANDEMIC.

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## Abstract:

**Background-** Telerehabilitation is defined as delivery of rehabilitation services at a distance using electronic information and communication technologies. In the current scenario of the COVID-19 pandemic, practicing physical therapy had to be modified to a large extent taking into account the guidelines of social distancing and covid norms. Tele-rehabilitation has evolved to a great extent in these times where technology was utilized to deliver the physical therapy services thus minimizing the therapist patient physical contact during assessment and management of various conditions. This study was conducted in an Indian city (Pune) to analyze the satisfaction level of the physiotherapists practicing telerehabilitation and to enlighten the challenges which were faced by them during the session looking forward to further manage or minimize the challenges and provide a scope for development in this emerging field of practice.

**Key Words –** Telerehabilitation, Covid-19 pandemic, Rehabilitation, Physiotherapy, Physiotherapist, Telephysiotherapy, Telehealth.

## INTRODUCTION

Telerehabilitation is delivering the rehabilitation services at a distance by means of communication technologies as well as electronic information. In the current scenario of the COVID- 19 pandemic, delivery of physical therapy had to be greatly modified taking into consideration the guidelines of social distancing and the covid norms. Tele-rehabilitation has evolved to a vast extent in these times where technology was used to deliver the services thus minimizing the physical contact between the therapist and the patient during assessment and management of various conditions. [1]

Telerehabilitation is a new and developing field under the telehealth umbrella. Primarily developed to provide equitable access to individuals who are residing remotely and to those who are disadvantaged physically and economically, telerehabilitation also has the capacity to improve the quality of rehabilitation health care. Online delivery of rehabilitation enables the rehabilitation therapist to optimize the timing, intensity and duration of therapy. Within the constraints of face-to-face treatment protocols in current health systems these modifications are often not possible. [2]

The barrier of distance, both of patients to rehabilitative services and of researchers to subject populations is minimized using the tools of rehabilitation. This enhanced access opens up new possibilities for implementing and discovering optimized strategies for interventions across the continuum of care. [3]

The future for telerehabilitation looks bright and is set to offer significant benefits to the physiotherapy profession. However, challenges do exist and must be met with innovation and a willingness and when necessary to adapt our current approaches. For instance, when providing intervention remotely via telerehabilitation, to circumvent the need to use our hands on a client, self-applied techniques, the use of a carer's or spouse's hands or the use of alternate exercise or self-management strategies may need to be considered. [4]

Although this field is considerably new, in the developed countries its use has rapidly grown. In general, telerehabilitation reduces the costs of the health care providers as well as the patients as compared with traditional inpatient or person-to-person rehabilitation. Furthermore, patients who live in remote places, can be benefited from this technology, where traditional rehabilitation services may not be easily accessible.[5]

The coronavirus disease 2019 (COVID-19) emergence has presented a global health threat, and it poses challenges to how physiotherapists deliver health care. Physiotherapists have an ethical obligation not only to reduce the spread of COVID-19 but also to provide client-centered care and to maintain or optimize the function of those living in the community. While maintaining the physical distancing recommendations, telerehabilitation provides an opportunity to maintain function, prevent future hospitalizations, and assist with discharge from hospitals. [6]

The global pandemic has reflected unfavorable impacts on the mental health and symptoms. This pandemic has also affected the healthcare department that is treating the patients suffering from diseases other than corona. The level of treatment for people with disorders in both physical and mental wellbeing is increased due to telerehabilitation, it also contributes to lowering of the hospital expenses.[7]

The application of telecommunication technology that provides distant support, assessment and intervention to individuals with disabilities is telerehabilitation (Ricker et al., 2002).

It also offers many new opportunities to provide rehabilitation services different clinical settings and in alternative ways.(Cooper et al., 2001; Lemaire et al., 2001).

Virtual Reality (VR) is becoming an affordable as well as practical technology for the practice of clinical medicine.[8]

Telerehabilitation is virtually delivering the services of rehabilitation into the patient's home. This methodology has shown to be advantageous when used to enhance or replace conventional therapy to overcome geographic, physical, and cognitive barriers. The exponential growth of technology has led to the development of new applications that enable health care providers to monitor, educate, treat, and support patients in their own environment. Best practices and Telerehabilitation studies which are well designed are necessary to build and sustain a strong Telerehabilitation system that is integrated in the current health care structure and also is cost-effective.[9]

While considering the aspect of primary care, there are several instances where telephysiotherapy may be an appropriate form, including the early management of acute pain, which may otherwise become chronic. By extending the availability of tele-physiotherapy beyond the pandemic 30 September 2020, we can improve the health of the population generally and, in particular, better serve remote or otherwise isolated people.[10]

Telerehabilitation offers an alternate way of delivering rehabilitation services. Information and communication technologies are used to facilitate communication between the healthcare professional and the patient in a remote location. The use of telerehabilitation is becoming more viable as the speed and sophistication of communication technologies improve. [11]

No significant difference was observed between the groups of patients (Tele and Comparison) and they were satisfied with the services received. Moreover, the physiotherapists' satisfaction with regard to goal achievement, patient–therapist relationship, overall satisfaction in the session, and quality and performance of the technological platform was high. As patient satisfaction is important in maintaining motivation and treatment compliance and the satisfaction of healthcare professionals must be high in order for new treatments to become mainstream in clinics, the results show that in-home telerehabilitation seems to be a promising alternative to traditional face-to-face treatments was the conclusion.[12]

In various pieces of literature, the rehabilitation in specific condition management has been reviewed, Physiotherapy telerehabilitation, in persons with Parkinson's disease has been noted to be feasible and safe.[13] In the researches done previously investigating telerehabilitation in postoperative orthopedic conditions has yielded promising results. It has shown to be as effective as in-person care; telerehabilitation after THR procedure could be helpful in addressing access issues in this population. Moreover, it may help reduce the cost of provision of the health care by enabling patients to take a more independent approach to their rehabilitation has been seen in a conducted study.[14] In-home teletreatment seems to be a promising way to dispense rehabilitation services for population of this kind.[15] Tele-rehabilitation may be one alternative way to address the growing demand for rehabilitation among older adults as it may offer quality home-based care, promoting autonomy among older adults.[16]

This study aims to understand the physiotherapist's perception, their level of satisfaction during provision of the telerehabilitation services and the various challenges faced during the sessions which were conducted by them during the pandemic.

Arising from the broader telehealth approach, rather than a subspecialty, telerehabilitation has been described as an alternative method of delivering conventional rehabilitation services.(Winters 2002). There has been growing interest in the telerehabilitation use over time as technologies have become increasingly prevalent and more sophisticated (Brochard 2010; Galea 2019); however, its translation has been slow into clinical practice, and barriers experienced early in the development of the field still persist (Standing 2018).

In the current literature, many examples demonstrate the scope of telerehabilitation. For example, to determine the need for modifications, home assessments have been completed remotely by occupational therapists with the use of combination consisting still photography, telephone calls, and technology of videoconferencing.(Ninnis 2019). Telerehabilitation has been used by physiotherapists for treating musculoskeletal conditions and post-surgical care (Richardson 2017; Van Egmond 2018)

How the intervention might work,

Telerehabilitation description simply has been stated as an alternative method of providing rehabilitation. Therefore, theoretically, the mechanisms which lead to the recovery should mirror those associated with programmes of conventional rehabilitation. It is now well established that organized, interdisciplinary stroke care reduces the likelihood of institutional care and long-term disability and reduces dependence in activities of daily living (Kalra 2007; Pollock 2014). The improvement of function after completion of rehabilitation programmes have been attributed to a combination of physiological recovery, reorganization within the brain (neuroplasticity), and compensation (Kwakkel 2004).

One of the key advantages of telerehabilitation is that it provides the opportunity for people who are isolated to access rehabilitation services. This feature is particularly beneficial in countries which are vast such as Canada and Australia, where many people live long distances away from rehabilitation centers which are specialized. People in rural and remote areas are unlikely to have access to rehabilitation teams with expertise in stroke, and they may not have access to rehabilitation clinicians at all. Eliminating the need for travel to rehabilitation centers may also benefit people with severely restricted mobility who are unable to travel or have difficulty travelling. Telerehabilitation is also likely to be beneficial in settings which are low-resource, where access to health professionals is poor but access is present to devices such as mobile phones.

The services of telerehabilitation also may be used to complement and enhance the quality of current services. The survivors of stroke have expressed concern regarding the lack of available long-term support and ongoing rehabilitation needs which are unmet (Ullberg 2016). It is possible that the use of telerehabilitation may help to address these gaps by supporting patients as they resume life roles on discharge from inpatient facilities.

Furthermore, the telerehabilitation use may result in cost savings in vivid ways. Reduced travelling time (for clinicians who visit patients in their own home) may mean that clinicians are able to fit more number of consultations into a single day. In addition, it may be possible to early discharge the patients from inpatient rehabilitation facilities and offer telerehabilitation as a way of continuing the programme of rehabilitation. Furthermore, telerehabilitation may provide a mechanism for increasing the therapy dose without face-to-face supervision.

Despite its apparent advantages, the challenges which are associated with telerehabilitation are well documented (Standing 2018; Theodoros 2008). One of the key issues faced by the clinicians is how to conduct assessments or provision of interventions that are typically 'hands on' approaches, as an exemplar, muscle strength assessment. The inability in conducting hands-on assessment or treatment means that therapists need to modify current techniques, for example, by involving the family members or teaching the patient independent ways to perform the intervention. (Russell 2009). [17]

## **METHODOLOGY –**

Permission was taken from institutional ethical committee. Physiotherapists practicing telerehabilitation were approached and permission was obtained prior to the study. Explanation of the study was given to the participants.

Utilization of a semi structured, 2 sectioned self-made questionnaire was done ( institutional validation was obtained). The first section consisted of closed ended multiple optioned questions and the later consisting of open ended questions which will lead to the collection of information regarding the diverse and slightly personalized challenges which were faced by the practitioners.

The questionnaire was sent to 34 Physiotherapists who are practicing telephysiotherapy and was filled by them. This questionnaire was to filled in digital format using Google forms

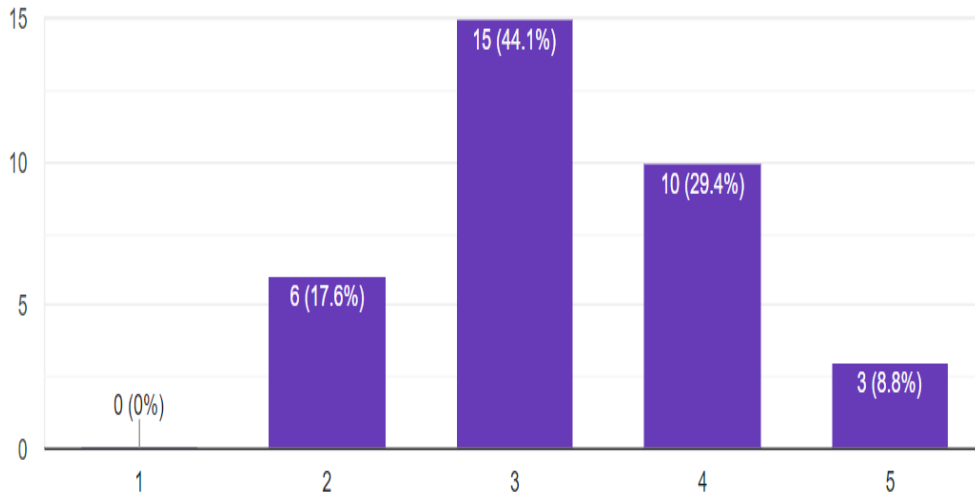
The responses were documented in the words of the respondents and used for the research purposes.

A sample population of 34 physiotherapists was obtained.

## **RESULTS**

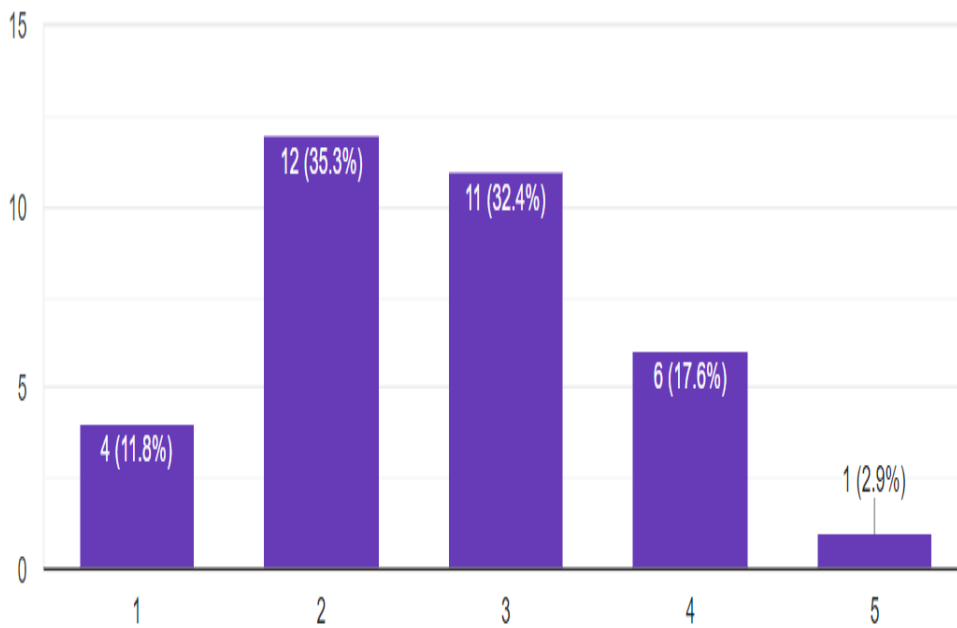
Considering the rate of satisfaction in terms of rapport that could be build with the patient during the session.

The graph below concludes that physiotherapists had an average level of satisfaction in terms of rapport building with the patient



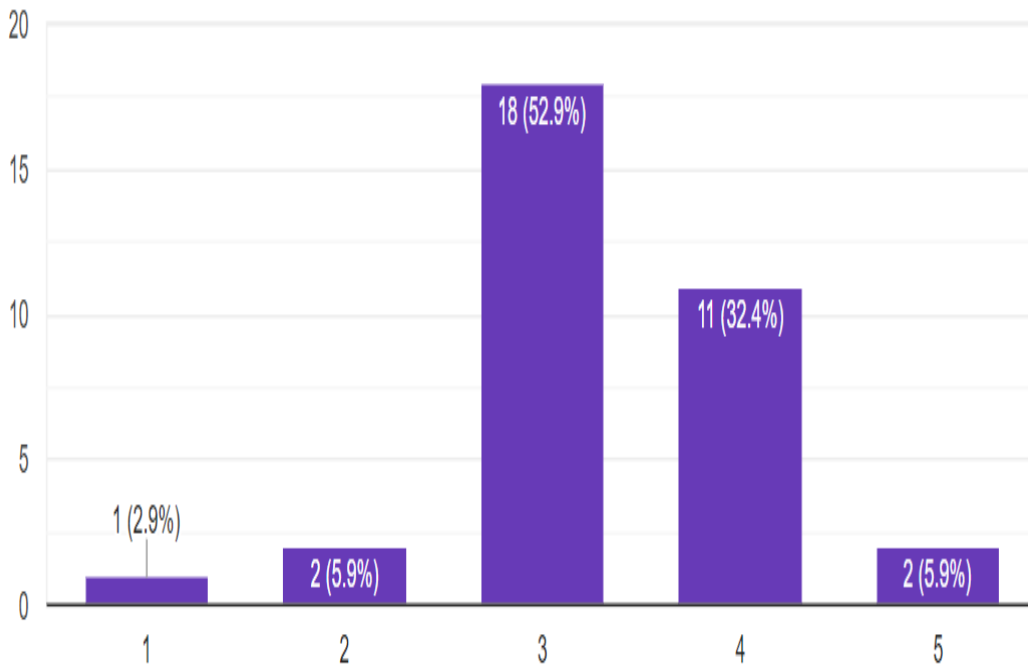
Taking into account the satisfaction with the assessment and evaluation which could be executed in the session

The graph below depicts that physiotherapists had poor satisfaction considering the assessment and evaluation in telerehabilitation

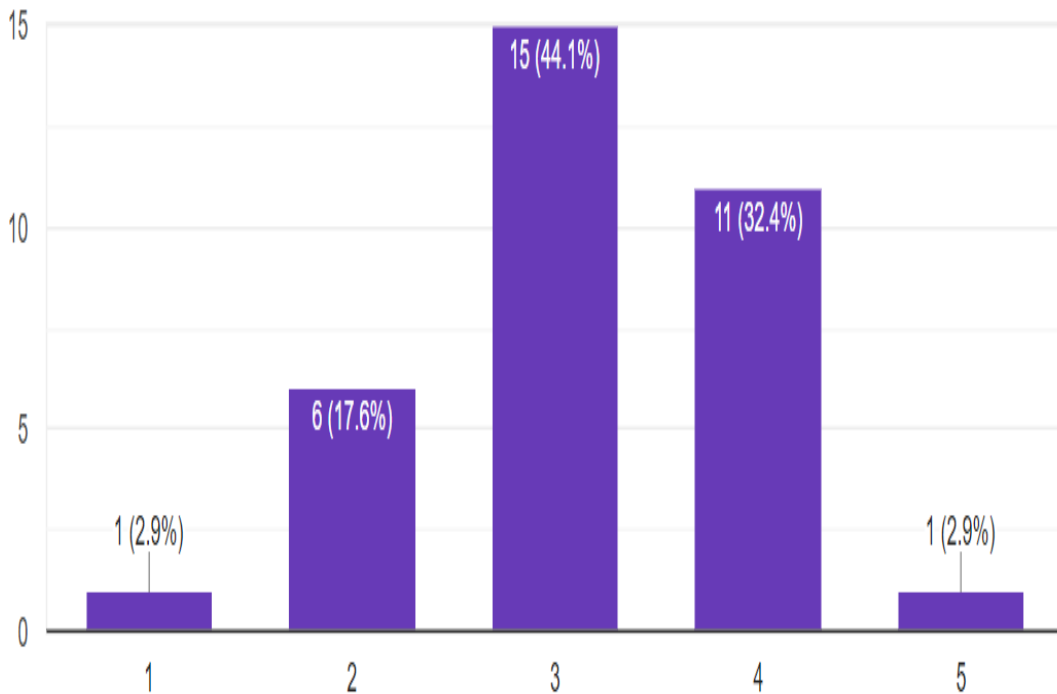


Amount of satisfaction considering the amount of information and instructions which were able to be delivered to the patient during the session

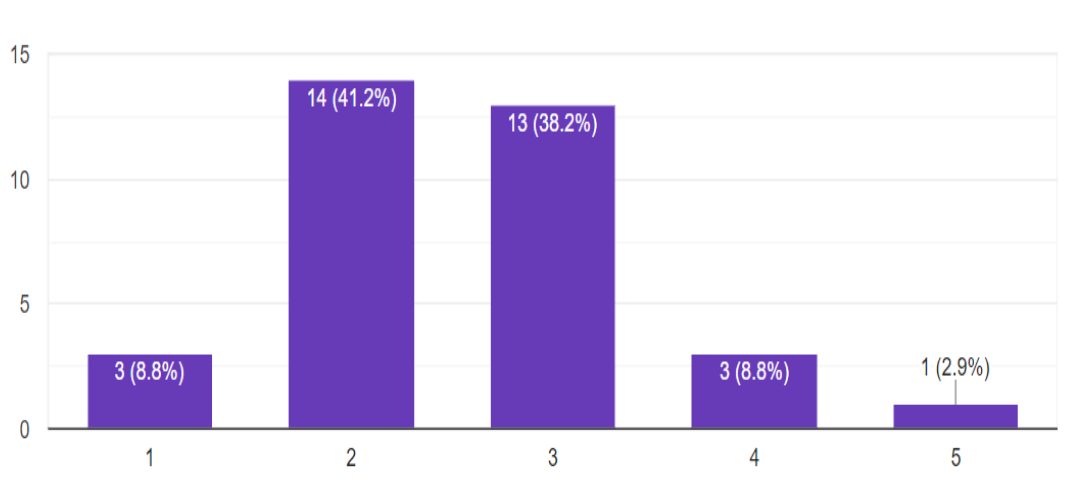
According to the graph underneath was found to be average



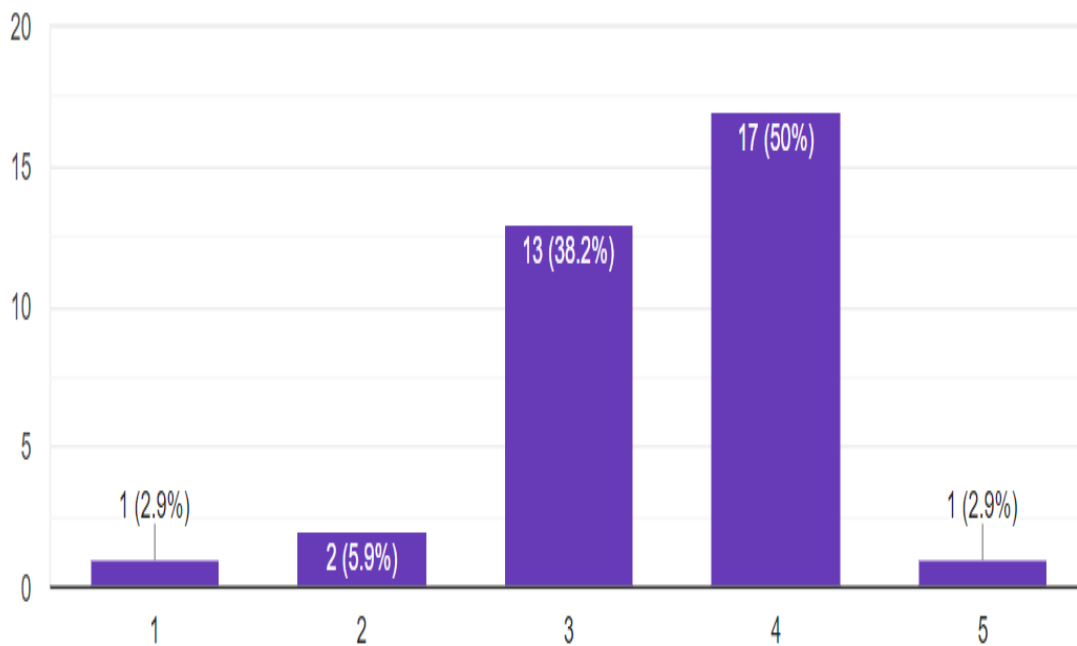
4. The satisfaction of the physiotherapists with the way they could implement the planned intervention in the session according the the following graph was average



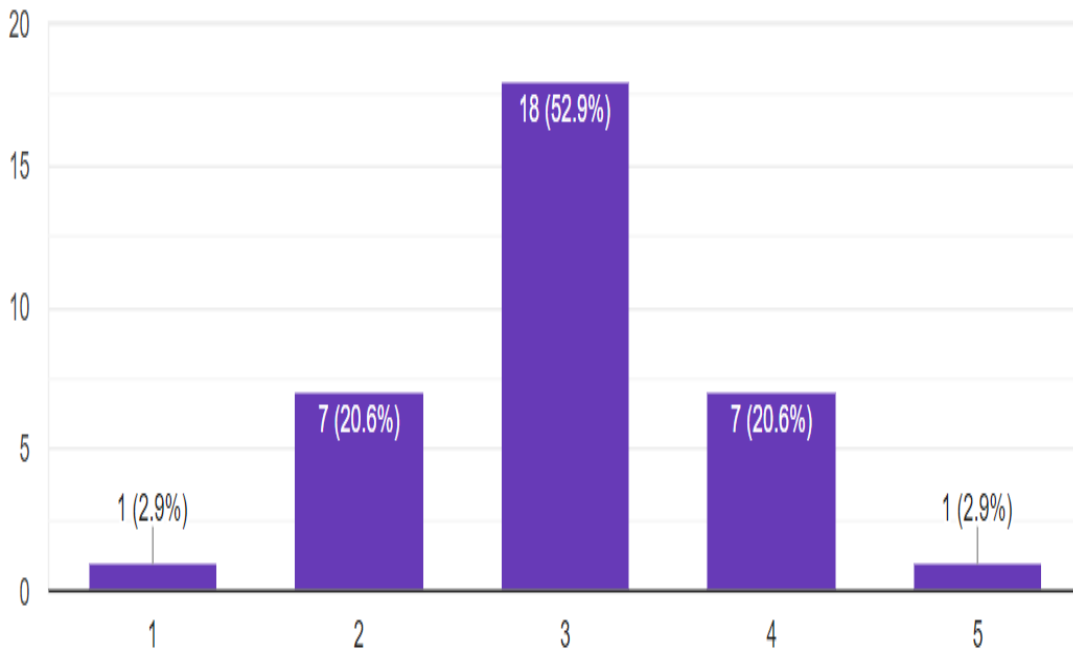
The below graph concludes that physiotherapists had poor satisfaction with the available tools for evaluation and treatment during telerehabilitation.



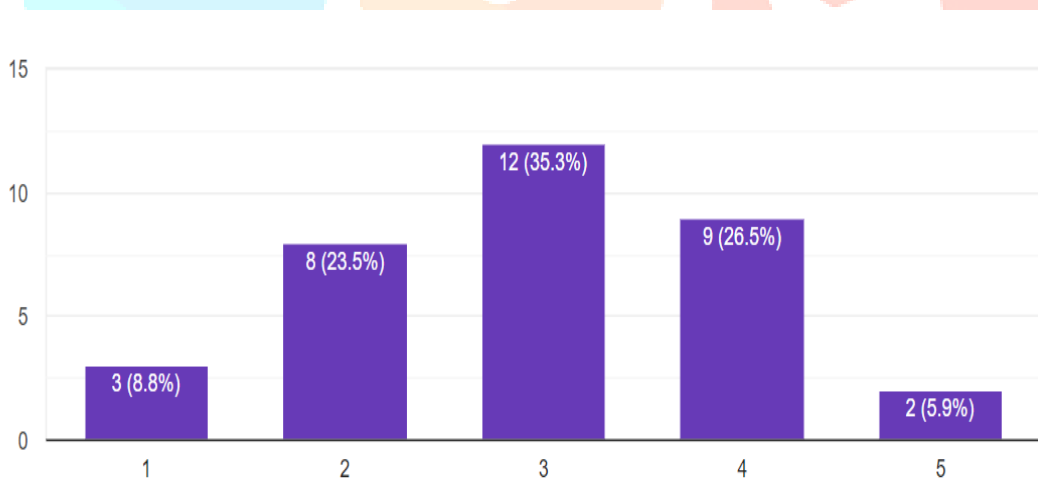
The following graph shows that most physiotherapists( 50%) had good satisfaction with the patients outcome attained through telerehabilitation.



The graph beneath concludes that, average satisfaction was obtained by maximum physiotherapists in terms of financial growth with the usage of telerehabilitation.



The graph below depicts that 35 percent ( most of the physiotherapists ) had average level of satisfaction with the overall telerehabilitation program.



## DISCUSSION

The purpose of this study was to understand the level of satisfaction in terms of rapport building with the patient, assessment and evaluation, delivery of information to the patient, implementation of the planned intervention, availability of tools, patient's outcome, expected financial growth and overall session. The further part of the study also deals with identifying the challenges which were faced by the physiotherapists during their telerehabilitation session.

As a result of this study vivid responses were obtained from 34 physiotherapists practicing telerehabilitation in a particular city in India. In terms of rapport building, 44.1 percent physiotherapists selected 3<sup>rd</sup> option and had an average level of satisfaction. Regarding the assessment and evaluation, 35.3 percent chose 2<sup>nd</sup> option and had poor satisfaction. Considering the amount of information and instructions physiotherapists were able to deliver to the patient, 52.9 percent chose 3<sup>rd</sup> option. And an average satisfaction was experienced. Considering the implementation of the planned intervention in the session, 44.1 percent chose the 3<sup>rd</sup> option and had average satisfaction. Taking into account the available tools for evaluation and



treatment during telerehabilitation, 41.2 percent chose the 2<sup>nd</sup> option and had poor satisfaction. Considering the patient's outcome, 50 percent had good satisfaction with and preferred the 4<sup>th</sup> option. In terms of expected financial growth, 52.9 percent had average satisfaction and chose the 3<sup>rd</sup> option. Considering the overall satisfaction in the telerehabilitation program, 35 percent chose the 3<sup>rd</sup> option and had average level of satisfaction. Challenges are also briefly discussed and opinions are obtained through the open ended questions.

According to the obtained results most of the physiotherapists were moderately satisfied with the aspects of telerehabilitation; least satisfaction rate was seen in the aspect of the available tools for evaluation and treatment whereas most satisfaction rate was given for patient's outcome.

The challenges faced were seen at a considerably personal level of experience and the obtained data revealed a variety of challenges which includes, In the area of communication, Physiotherapists encountered challenges which include difficulty understanding the commands, most of the patients found it difficult to understand the treatment procedures, communication established was not good, execution of communicated part was a difficulty, patients were not able to understand the explanation, communication satisfaction was compromised, patient could not perform the exactly as told, difficulty in conveying instructions and monitoring, distraction in communication, first few sessions were difficult to communicate and adapt, Communication was tough, not always good, disconnected, limited.

In the aspect of technological issues, Challenges were, poor network, network disturbance, technological issue with elderly handling the technology, appropriate arrangement of devices for the session, lack of knowledge of technology. In the aspect of assessment and alternatives for hands on approaches, self-techniques had to be administered, video exercise charts had to be used, Evaluation technique modification, Limited alternatives available, Was very difficult, Clinical examination, palpation, movement evaluation, proper assessment, manual therapy was impossible, Difficulty to reach the diagnosis. The responses obtained for availability of reliable tools were mixed depending on the awareness, but most of the physiotherapists found were very less and difficult to find, not feasible, Very few physiotherapists responded as the availability was good, in the aspect of, Technical environment required for the session. Half of the physiotherapists found this section less challenging and responses were obtained as the environment was good, easily available, didn't make lot of difference and less difficulty level. To the contradiction, Half of the participants reported that the environment couldn't be as expected, was not so good, space issue, was not suitable for all the patients, lack of tech savvy people, mild distractions were present. The other nonspecific challenges faced by physiotherapists were, problems in exercise demonstration, difficulty reaching the provisional diagnosis, passive exercises cannot be given.

When discussion about the future scope and development in telerehabilitation,

The scope of telerehabilitation was expressed as telerehabilitation will be very necessary but with much more development, it will be good only for the first visit and only for consultation and follow ups, it can be used widely for the advanced stages of rehab where in person supervision is not necessary. It is seen as a good alternative for patients who cannot visit the clinic and should be included in the curriculum of physiotherapy. Scope was also predicted as good for connection with the world, can be helpful in some scenarios, it is seen to be feasible for increased access to patients, safer delivery of treatment during pandemic and a cost effective method it is also seen to be useful in young patients who can understand instructions and are familiar to technology. The future scope with the view of majority of physiotherapists is increasing and will be great in the future. According to the other side of the content, A very few but considerable amount of participants find the scope not too good or average, but can't be recommended for neuro rehab, should be avoided if possible or can be used only for distant patients scope can be there if technology advances. Considering the view of majority of the participants, the future scope with the view of majority of physiotherapists is increasing and will be great in the future.

Views or suggestions regarding further development in the field,

Further development can be absolutely made in the field, developing a good medical platform, customized animations of exercises, developing virtual centers, development in sources to access telerehabilitation, development in technology, inclusion of telerehabilitation in the physiotherapy syllabus to increase awareness, planning the schedules, minimizing the disturbances, increasing the awareness and knowledge of this sector, development of tools and applications to help in assessment and management, using artificial intelligence, improving the communication devices are the scopes of development according to the participant physiotherapists.

## **CONCLUSION**

In terms of rapport building, physiotherapists reported an average level of satisfaction, Regarding the assessment and evaluation the level of satisfaction was found to be poor. Considering the amount of information and instructions physiotherapists were able to deliver to the patient they reported an average level of satisfaction. Considering the implementation of the planned intervention in the session average satisfaction level was met. Taking into account the available tools for evaluation and treatment during telerehabilitation the satisfaction level was poor Considering the patient's outcome good satisfaction was seen. In terms of expected financial growth average satisfaction was depicted. Considering the overall satisfaction in the tele rehabilitation program physiotherapists had average level of satisfaction. It is also concluded that physiotherapists also reported various challenges they faced in the telerehabilitation session as enlightened in the discussion.

## **CONFLICT OF INTEREST**

No conflict of interest is shown by the authors.

## **ETHICAL APPROVAL**

This study was conducted based on the guidelines from “The Declaration of Helsinki”. Hence ethical approval was not required.

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