

## The Perceptions, Willingness, and Barriers towards Participation in Telerehabilitation among Malaysian COVID-19 Patients

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### Abstract

Demand for rehabilitation in Malaysia has increased following the spike in Coronavirus disease 19 (COVID-19) cases since 2020. With limited delivery of physical therapy services, travel restrictions, and risk of virus transmissions, telerehabilitation presents an alternative to traditional rehabilitation. Previous studies have investigated the perception of telerehabilitation among healthcare professionals in Malaysia, but lack investigations on the perceptions, willingness, and barriers toward participation in telerehabilitation among Malaysian COVID-19 patients. Therefore, it is important to understand the perceptions, willingness, and barriers toward participation in telerehabilitation among Malaysian COVID-19 patients to determine the applicability of telerehabilitation in Malaysia. The purpose of this study was to identify the perceptions, willingness, and barriers toward participation in telerehabilitation among Malaysian COVID-19 patients. This is a quantitative, cross-sectional study. The recruited Malaysian COVID-19 patients were required to fill in a self-administered online questionnaire. The data collected were analyzed using the Statistical Package for Social Science (SPSS) version 21 and presented in frequencies and percentages. 166 Malaysian COVID-19 patients were included in this study. Most participants were students aged 18-25 years old (68.1%). The participants were highly educated, had high access to technology, and had a high ability in using technological devices and the internet. Most of the participants showed good perceptions toward telerehabilitation and a high willingness to participate in telerehabilitation during (75.3%, n=125) and after (65.7%, n=109) the pandemic. The most frequently selected human and technical barriers to telerehabilitation participation were that telerehabilitation was not as effective as face-to-face physical therapy sessions (18.7%) and lack of exercise equipment (34.8%), respectively. Overall, most participants had high perceptions towards telerehabilitation and were willing to participate in telerehabilitation with the acknowledgment of barriers towards telerehabilitation, indicating that the implementation and development of telerehabilitation in Malaysia are possible.

### Keywords

COVID-19, Telerehabilitation, Physical Therapy, Students, Young Adults

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## Introduction

In the 21st century, Malaysia was struck by COVID-19, which was caused by the SARS-Cov-2 virus. With a high number of confirmed COVID-19 cases being announced in Malaysia, the Malaysian healthcare system was stretched to its limit to combat this pandemic. The pandemic challenged the field of physical therapy. To date, physical therapists are involved in the acute, sub-acute, and long-term phases of COVID-19 rehabilitation. In the acute stage of COVID-19, the role of physical therapists is focused on enhancing oxygenation of tissue, airway clearance, ventilation weaning, and preventing aspiration pneumonia (World Health Organization, 2020). In the sub-acute phase, physical therapy targets mobility, enhancing the patient's ability to perform activities of daily living (ADLs) independently and provides support for psychosocial conditions. In the long-term phase, long-term care is needed, where physical therapists are more focused on home exercises, the management of specific impairments, maximizing functional independence, and providing support for psychosocial conditions (World Health Organization, 2020).

On the other hand, telerehabilitation (TR) as an alternative way of rehabilitation was introduced to resolve these challenges and enhance healthcare accessibility. TR could be an alternative to the face-to-face rehabilitation method and provide rehabilitation even for patients in the acute phase of their disease (Peretti et al., 2017). TR could also enhance rehabilitation coverage for patients who live far away and have transportation issues in attending rehabilitation sessions at healthcare centers (Peretti et al., 2017). To date, with travel restrictions and transportation issues for COVID-19 patients to travel to rehabilitation centers or hospitals, TR could be another option to deliver rehabilitation to the patients. Willingness to participate in cardiac or other fields of TR such as required by those living with neuromuscular and musculoskeletal diseases has been done before (Falter et al., 2022; Fang et al., 2022). However, there is still scarce evidence on the perceptions, willingness, and barriers toward participation in TR by COVID-19 patients in Malaysia.

Therefore, the aim of this study is to identify the applicability of TR in Malaysia through understanding the perceptions, willingness, and barriers toward participation in TR among Malaysian COVID-19 patients.

## Methodology

This study has a quantitative, cross-sectional design, targeted at COVID-19 patients in Malaysia. For inclusion criteria, participants should have a history of a positive result in either Reverse Transcription – Polymerase Chain Reaction test (RT-PCR) or diagnosed with COVID-19 by a medical doctor, as well as be aged 18 years old and above. Participants who were unable to understand English and are non-Malaysian were excluded from the study.

An online self-administered questionnaire was used for this study. The questionnaire consisted of 5 sections, including (a) participant's screening; (b) demographic data; (c) perception of Malaysian COVID-19 patients toward TR; (d) willingness of Malaysian COVID-19 patients to participate in TR, and (e) barriers that may be encountered. In section (b), the questions related to the usage of technological devices were adopted and modified from the study by Seidman et al.

(2017). Ethical approval was obtained from the Research and Ethics Committee of INTI International University (Ethical Number: INTI-IU/FHLS-RC/BPHTI/7NY12021/009). Electronic informed consent was obtained from the participants after they agreed to participate in this study.

## Results and Discussion

166 participants were involved in this study. Most of the participants were between 18 and 25 years old (68.1%) with post-COVID-19 syndrome (n=61), had completed at least a Bachelor's degree (n=99), and were students (n=78). In terms of technological device usage, 56.6% of participants engaged with 2 technological devices. 97.6% of them have access to at least one technological device daily. The mobile phone was reported to be the most used technological device (89.8%). In terms of self-rating ability in using the technological device and accessing the internet, 56.6% of the participants reported very good ability, followed by 33.7% of participants reporting good ability.

Most participants showed high perceptions toward TR with 60.8% of the participants reporting that TR allowed them to continue their current rehabilitation at home. 78.3% of participants reported that TR saved their time for traveling. About 60.8% of participants agreed that TR was able to enhance physical therapy accessibility in their community even in rural areas. 50.6% of the participants reported that it was easy to participate in TR. Moreover, 73.5% of participants agreed that TR was able to control the virus transmission (Table 1).

Table 1. The perceptions of COVID-19 patients towards telerehabilitation

Item	Strongly disagree N (%)	Disagree N (%)	Neither agree nor disagree N (%)	Agree N (%)	Strongly agree N (%)
Rehabilitation is needed	21 (12.7%)	41 (24.7%)	44 (26.5%)	43 (25.9%)	17 (10.2%)
Continue current rehabilitation at home	10 (6.0%)	12 (7.2%)	43 (25.9%)	87 (52.4%)	14 (8.4%)
Saves time in traveling	9 (5.4%)	6 (3.6%)	21 (12.7%)	97 (58.4%)	33 (19.9%)
Enhance physical therapy accessibility in community	5 (3.0%)	24 (14.5%)	36 (21.7%)	85 (51.2%)	16 (9.6%)
Easy to participate	7 (4.2%)	22 (13.3%)	53 (31.9%)	73 (44.0%)	11 (6.6%)
Able to understand and monitor in telerehabilitation	8 (4.8%)	35 (21.1%)	45 (27.1%)	68 (41.0%)	10 (6.0%)
Able to reduce virus transmission	9 (5.4%)	10 (6.0%)	25 (15.1%)	67 (40.4%)	55 (33.1%)

<b>More costly</b>	17 (10.2%)	47 (28.3%)	62 (37.3%)	30 (18.1%)	10 (6.0%)
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53.0% of the participants agreed that TR is another option to receive physical therapy service. Meanwhile, 67.5% of participants were willing to share personal data and videos with the healthcare professionals during TR sessions, and with a percentage of 62.7% of them were more willing to participate in individual therapy sessions. Besides, 75.3% of the participants were willing to participate in TR during this pandemic. However, only 65.7% of participants were willing to participate in TR after the pandemic, showing a reduction of 9.6% (n=16). The most frequently selected human factor was “not as effective as face-to-face physical sessions” (18.7%), followed by “lack of awareness about TR” (16.4%), “less monitoring from the physical therapist” (14.3%), and “lack of physical touch” (13.9%). For technical factors, “lack of exercise equipment” was the most frequently selected factor (34.8%), followed by “slow internet” (27.3%), and “no network coverage” and “hardware limitations” sharing the same result (12.6%). Software limitations were the least frequently selected factor with a percentage of 11.5%.

## Discussion

Our study found that most participants demonstrated good perceptions towards TR. More than half of them agreed that TR enabled them to continue their current rehabilitation at home, which showed consistent results with the study by Albahrouh and Buabbas (2021). This might be due to the implementation of social distancing guidelines and travel restrictions imposed by the Malaysian government during the COVID-19 period, which affected the delivery of physical therapy services. Hence, TR became an alternative method for rehabilitation at home (Monaghesh & Hajizadeh, 2020).

Furthermore, most of the participants in the current study agreed that TR saved their time in traveling, showing similarity to a study done by Scherrenberg et al. (2021). Time wasted in travelling and waiting for the physical therapy session is not required compared to face-to-face physical therapy sessions. Our findings also demonstrated positive responses in terms of TR being able to enhance physical therapy accessibility in the community even in rural areas, which showed results consistent with the study done by Bairapareddy et al. (2021) in India. Meanwhile, most of the healthcare settings were in urban areas, where people had more accessibility to healthcare settings, while those who lived in rural areas received lesser attention as it was difficult for them to travel especially during the travel restrictions of the pandemic (Bairapareddy et al., 2021). TR was able to address this issue and bridge the gap in receiving rehabilitation between urban and rural areas (Bairapareddy et al., 2021).

More than half of the participants in this study demonstrated that it was easy to participate in TR, and this result was consistent with studies done by Bennell et al. (2021) and Scherrenberg et al. (2021). However, this was in contrast with a study done in developing countries, where it was stated that difficulty in using technology was a barrier towards the implementation of TR (Leochico et al., 2020). Nevertheless, as most of the participants in our study were students, had higher access to technological devices, and had regular usage of technological devices, they also had higher acceptance and capacity in using technological devices and online platforms. Therefore, different results were drawn compared to studies done in other developing countries (Seidman et

al., 2017). Meanwhile, 38.5% of participants in our study showed disagreement that TR will be more costly compared to face-to-face sessions. TR is shown to have advantages in terms of reducing the financial burden of patients and their families, as during TR sessions, patients are not required to pay petrol fees, parking fees, and utility fees (Albahrouh & Buabbas, 2021; Bahari et al., 2019). Therefore, the result of our study indicates that the participants had good perceptions towards TR.

Albahrouh and Buabbas (2021) reported that some of their female participants refused to reveal themselves during video-call sessions especially when a male therapist was present. In contrast with their finding, participants from our study showed a positive response with it, as most of our participants were students who were familiar with online classes during the pandemic period.

Positive responses to individual therapy sessions were found in this study. Similar findings were reported by Bennell et al. (2021) where their participants revealed that individual therapy TR sessions were more convenient, easier to access, had less waiting time, and were more focused on by physical therapists. However, there was a reduction in the percentage of patients receiving TR from during to after the pandemic. The authors revealed that during the pandemic, the travel restrictions and social distancing guidelines limited physical therapy services. People were also afraid of getting infected by the virus (Monaghesh & Hajizadeh, 2020). Therefore, TR seemed to be the best option for the situation. However, after the pandemic, which includes the beginning of the endemic phase, and with the reduction of social distancing guidelines and travel restrictions, people were getting more options to receive physical therapy services. Therefore, people had more flexibility to go outdoors and resume face-to-face physical therapy sessions.

In terms of barriers towards participation in TR, our findings showed consistency with the study done by Scherrenberg et al. (2021) and Bennell et al. (2021). Most of their participants had identified the disadvantages of TR, including less monitoring by the rehabilitation team, the rehabilitation team having less insight towards their situation, as well as the absence of physical contact (Scherrenberg et al., 2021; Bennell et al., 2021). Meanwhile, participants of our study demonstrated the technical factors that prevented them from participating in TR, showing consistency with a study done by Jafni et al. (2019), where the study had stated less use of hardware and software, and low connectivity being the factors that contributed to the slow implementation of TR in Malaysia. Similarly, lack of technological readiness was the main barrier towards TR usage, including limited user-friendly software, connectivity issues, and hardware limitations (Albahrouh & Buabbas, 2021). The limitations of our study are its smaller sample size and younger population with a majority of students. Therefore, caution is advised during data interpretation and generalization to the public.

## **Conclusion**

The outbreak of COVID-19 has affected the delivery of healthcare including physical therapy. To resume physical therapy services, the uptake of TR is an alternative to overcome the pandemic and endemic phases. Generally, the implementation of TR in Malaysia is slow. However, TR has proven its effectiveness in managing various clinical conditions. This study showed that most of the participants had high perceptions and willingness towards TR during and after the pandemic,

even with the acknowledgment of barriers towards TR. This indicates that the implementation of TR in Malaysia is possible, and the related organizations should take these findings into consideration to initiate TR programs in Malaysia.

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