

EXPLORING PERCEPTIONS OF AND WILLINGNESS TO USE TELEREHABILITATION DURING THE COVID-19 AMONG PHYSIOTHERAPISTS IN MALAYSIA: A CROSS-SECTIONAL STUDY

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Abstract: *The COVID-19 pandemic has caused an interruption of face-to-face physiotherapy service, resulting in a rapid and expansive exploration of telerehabilitation as a viable service during the pandemic. However, the efficacy of this approach of care is still unknown. This study aimed to investigate the physiotherapists' perceptions of and willingness to use telerehabilitation in Malaysia during the COVID-19 pandemic and the barriers to effective telerehabilitation implementation. A cross-sectional survey using a questionnaire was developed via Google form and sent to the members of Malaysian Physiotherapy Association (MPA). Descriptive and chi-square tests were used for analysis. In total, 231 physiotherapists (81.05% acceptance rate) completed the questionnaire. Most participants (86%) believed that telerehabilitation is a practical approach for providing physiotherapy services to patients, particularly during the COVID-19 pandemic, and 92.8% stated that telerehabilitation has the potential to save costs and travel time. A total of 90.9% of participants were willing to deliver*

physiotherapy services via telerehabilitation. The results suggest that the more frequently physiotherapists used the internet at work, the more willing they were to adopt telerehabilitation systems ($p= 0.016$). The common barriers identified were lack of appropriate equipment training (57.2%), user-friendly software (47.6%), expensive equipment (48.5%), and patient privacy and confidentiality (47.6%). Overall, physiotherapists in Malaysia were willing to use telerehabilitation, but there was a lack of support and proper guidance for telerehabilitation practice during and after the COVID-19 pandemic. The identified barrier must be addressed for effective telerehabilitation adoption.

Keywords: COVID-19, Physiotherapy, Perceptions, Readiness, Telerehabilitation

Introduction

An outbreak of the coronavirus disease (COVID-19) pandemic surged all around the world in 2020, which caused a significant impact on many sectors, such as the economy, education, and healthcare industries worldwide. The pandemic of COVID-19 has disrupted many aspects of people's lives, including daily routines and the working environment. Among other sectors, the healthcare industry has suffered. Consequently, the devastating effects of COVID-19 have been highly challenging for healthcare workers and patients. The Ministry of Health (MOH) of Malaysia has minimized access to outpatient rehabilitation services to limit the spread of the virus. Hence, almost all physiotherapy services have been stopped. The healthcare systems still need to deal with the rehabilitation needs of people with comorbidities, demonstrating that the pandemic's impacts extend beyond the illnesses it causes (Bezuidenhout et al., 2022). Rehabilitation has been crucial in these circumstances and will continue to play an essential role throughout the pandemic. It improves health outcomes by improving health and functioning, assisting in the early discharge of inpatients, and reducing relapse and worsening following discharge (Bezuidenhout et al., 2022; Puhan et al., 2005). Patients' health conditions may worsen if rehabilitation services are discontinued or delayed (Robison et al., 2009)

In light of the pandemic, physiotherapy service delivery should be changed to ensure the safety of outpatients. It is done to mitigate the long-term impacts of the disruption of physiotherapy services, which could lead to a considerable increase in the number of disabled people in the future (World Physiotherapy, 2021). Regardless of COVID-19, there are several concerns and potential difficulties for physiotherapists due to the necessity of their services. Thus, many national and international orders have been issued, including physical separation and other preventative behavior modification measures such as hand washing and face masks to minimize the risk of infection (Van den Broucke, 2021). The global pandemic has forced the physiotherapy profession to explore using telehealth and digital technology as a medium for physiotherapy practices (Cottrell & Russell, 2020). To increase accessibility, the World Confederation for Physical Therapy (WCPT) has encouraged the use of telerehabilitation and resources and guidance on implementing such services during the COVID-19 pandemic by many national organizations (Alan Lee et al., 2020).

The term "telerehabilitation" refers to a relatively modern approach to providing rehabilitation services at a distance using telecommunications technology. Physiotherapists may communicate with patients via video conferencing, messaging, or other forms of communication technology (Fiani et al., 2020). Examples of readily available software and applications for facilitating telerehabilitation sessions include cloud-based ones (Coviu, Doxy.me), app-based systems (Physitrack), or those that are integrated into practice

management software like Cliniko (Fiani et al., 2020; Johnson et al., 2018). People who have disabilities can take advantage of these services to receive therapeutic interventions, remote monitoring of their progress, education, consultation, training, and an opportunity to network with others who have conditions comparable to their own (Brennan et al., 2009, 2010). During the COVID-19 outbreak, it was regarded as a feasible alternative healthcare delivery method, and numerous studies have recognized its feasibility in treating pain and incapacity. Telerehabilitation is a more organized, specialized, and efficient service than the conventional technique of face-to-face rehabilitation sessions, which is one of the main advantages it offers over the traditional method (Aderonmu, 2020; Brennan et al., 2010). It gives medical professionals, including doctors, therapists, and nurses, the ability to connect with patients and encourage them to participate in rehabilitation activities from their homes. It grants the patient autonomy and motivates them to take control of their condition by encouraging them to become active participants in their care. Access to medical care is facilitated for those who live in geographically isolated places or have mobility restrictions owing to a physical impairment, lack of transit options, or socioeconomic considerations (Brennan et al., 2009, 2010). Additionally, it saves patients and healthcare providers time and money spent on travel.

However, the implementation of telerehabilitation can be linked to the attitude and willingness of healthcare staff and the receptivity of healthcare organizations toward new technologies. To ensure the long-term use of telerehabilitation systems, it is essential to comprehend healthcare professionals' perspectives regarding telerehabilitation implementation. There is a gap in the literature addressing physiotherapists' perceptions and willingness to employ telerehabilitation in Malaysia during the COVID-19 pandemic. The purposes of this study were to investigate physiotherapists' perceptions of telerehabilitation and their willingness to use it in Malaysia during the COVID-19 outbreak, as well as the barriers to effective telerehabilitation adoption in the field of physiotherapy.

Methods

Study Design

The design of this study was a cross-sectional survey of Malaysian Physiotherapy Association (MPA) members. A self-report questionnaire was adopted from the previous research (Albahrouh & Buabbas, 2021) for use in this survey. Participants profile, technological background, perceptions of telerehabilitation, comfort with technology, willingness to use telerehabilitation, and barriers to using telerehabilitation were all sections included in the questionnaire. A four-point Likert scale was used to collect responses for the last three sections (from strongly disagree to strongly agree).

Participants

The convenience sampling method was used in this study, and a sample size of 285 was obtained based on Krejcie and Morgan table (Krejcie & Morgan, 1970). Physiotherapists eligible to participate in this study were members of the MPA with a minimum of 1-year clinical experience. Additionally, participants were voluntarily involved in the study.

Procedure

A survey was developed via Google Form to collect data from physiotherapists. The questionnaire was distributed through MPA's official social media between June 2022 and July 2022. Data was collected over two months. Data from respondents has been collected anonymously. This was informed to respondents via a confidentiality declaration included in

the survey. A total of 231 physiotherapists (81.05% acceptance rate) participated in the study and completed the questionnaire.

Ethical Considerations

The ethical approval for this study was obtained from the Faculty of Health Sciences- Research and Ethical Committee Universiti Teknologi MARA (UiTM) (Ref. number: FERC/FSK/MR/2022/0154). All participants provided written consent and were informed that their participation in the study were voluntary, and they had the right to revoke it at any moment.

Data Analysis

All collected data were analyzed using SPSS version 26.0. The analysis consists of descriptive statistics to express the results in frequency and percentage. Data were analyzed based on four-point Likert scale from strongly disagree to strongly agree for the sections perceptions of telerehabilitation, comfort with technology, and willingness to use telerehabilitation. The Chi-Square test examined the association between the physiotherapist's field of practice, internet usage at work, and readiness to use telerehabilitation during the COVID-19 pandemic. The significance level was set at $p < 0.05$.

Results

Participant Profile

Table 1 shows the participants profile. The results show that approximately over half of the participants were under 35 years of age ($n=165$; 71.4%) and were female ($n=161$; 69.7%). Most of the participants were in the area of orthopedics ($n=61$; 26.4%), with years of working experience 4-11 years ($n=111$; 48.1%). The results also show that most of the participants were from a university hospital ($n=100$; 43.3%)

Table 1: Demographic Data

Participant Profile		Number (%)
Age	Less than 35	165 (71.4)
	35-50	52 (22.5)
	51-60	8 (3.5)
	above 60	6 (2.6)
Gender	Female	161 (69.7)
	Male	70 (30.3)
Placement Area	Cardiorespiratory	46 (19.9)
	Musculoskeletal	28 (12.1)
	Neurology	32 (13.9)
	Orthopedic	61 (26.4)
	Pediatric	11 (4.8)
	Geriatric	22 (9.5)
	Others	31 (13.4)
Years of Working	2-4	82 (35.5)
	4-11	111 (48.1)
	11- 21	26 (11.3)
	21 Above	12 (5.2)
Field of Practice	Freelance	14 (6.1)
	Physiotherapy	
	Government Hospital	50 (21.6)

Private Hospital Centre	/	67 (29)
University Hospital		100 (43.3)

Technological Background

This section investigates the physiotherapists' computer and information technology usage, such as using the internet, e-mail, and telemedicine applications. Over half of the participants (82.6%) use computers frequently at work, while most participants (91.8%) use the internet often at work. Similarly, just over half of the participants (77%) use e-mail frequently at work. Most respondents (38.5%) have never used a telerehabilitation system.

Perceptions of Telerehabilitation

The vast majority of participants (94.8%) concurred that information and communication technology (ICT) might play a role in the provision of healthcare (Figure 1). Most participants (86%) felt that telerehabilitation is a practical approach to providing physiotherapy services to patients, particularly during the COVID-19 pandemic. Most respondents (92.8%) said telerehabilitation might result in time and cost savings. According to more than half of participants (83.5%), telerehabilitation could lighten the workload for physiotherapists. Finally, over half of respondents (82.2%) stated that the application of healthcare ICT is available in their hospitals or centers.

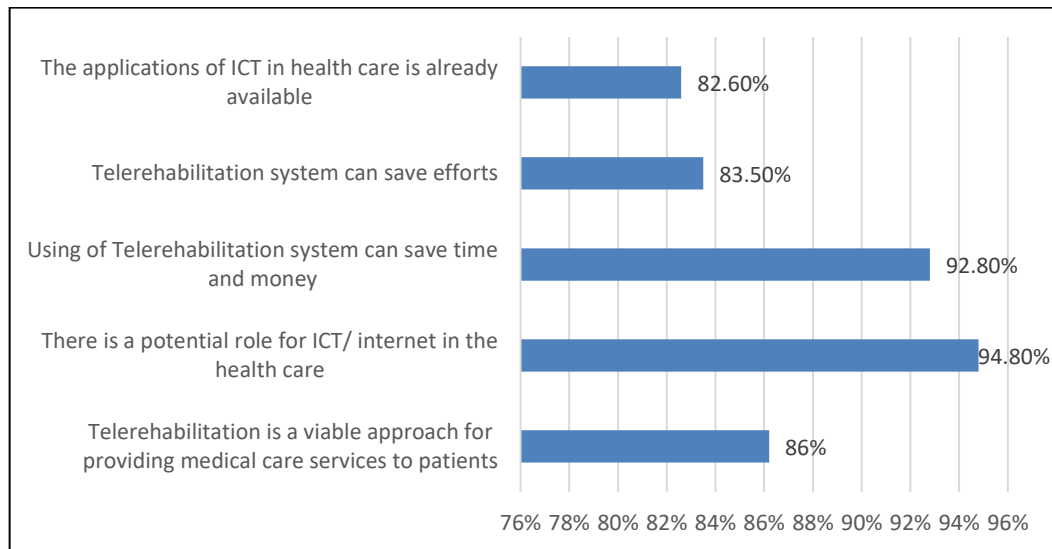


Figure 1: Physiotherapists' Perceptions of Telerehabilitation Systems

Willingness to Use Telerehabilitation

The findings show (Figure 2) that the majority of respondents (91.2%) were content to use telerehabilitation systems to approach other medical facilities or hospitals for consultations. Additionally, the majority of physiotherapists (90.90%) were willing to provide telerehabilitation services. Field of practice and willingness to use telerehabilitation systems were not shown to be significantly associated ($p= 0.479$). There was a significant association ($p= 0.016$) between internet usage at work and willingness to utilize telerehabilitation, suggesting that the more frequently physiotherapists used the internet at work and felt more comfortable using technology, the more willing they were to adopt telerehabilitation systems (Table 2).

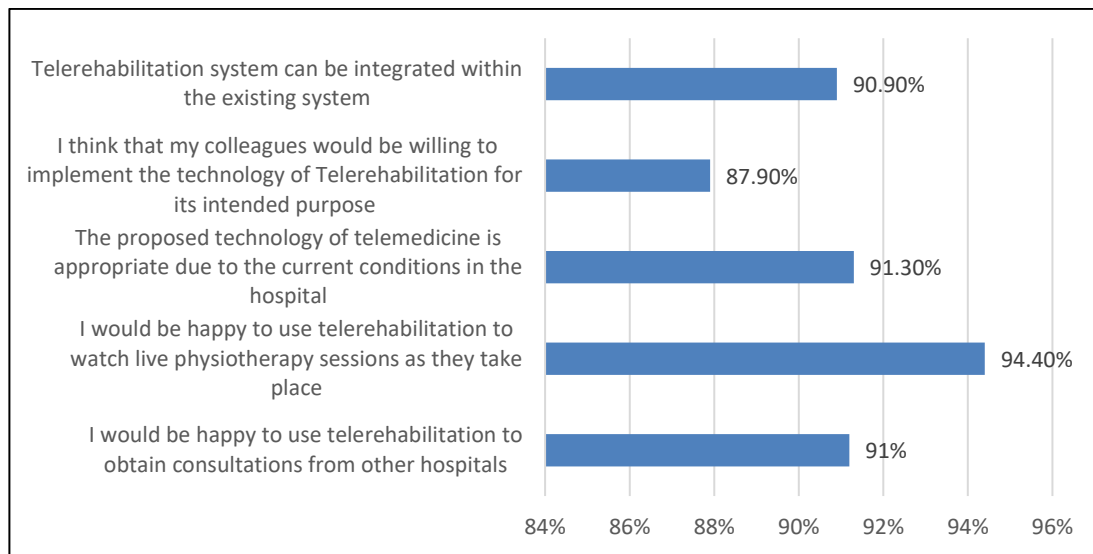


Figure 2: Willingness to Use Telerehabilitation Systems

Table 2: Association between Field of Practice, Internet Usage at Work and Willingness to Use Telerehabilitation

Variables	Willingness to Use Telerehabilitation		X ² statistic (df)	p-value
	Agree n (%)	Disagree n (%)		
Field of Practice				
Freelance Physiotherapy	12 (85.7)	2 (14.3)	5.516 (6)	0.479
Government Hospital	44 (88)	6 (12)		
Private Hospital / Centre	65 (97)	2 (3)		
University Hospital	79 (87.8)	11 (12.2)		
Internet Usage at Work				
Always	162 (94.2)	10 (5.8)	18.861 (8)	0.016*
Often	35 (87.5)	5 (12.5)		
Sometimes	7 (63.6)	4 (36.4)		
Rarely	4 (80)	1 (20)		
Never	2 (66.7)	1 (33.3)		

Barriers to Using Telerehabilitation

Figure 3 depicts the barriers identified in this study as obstacles to using telerehabilitation in respective hospitals or centers. According to the findings, the most prevalent barrier highlighted by respondents was a lack of appropriate equipment training (57.2%) and user-friendly software

(47.6%), expensive equipment (49%), and patient privacy and confidentiality (47.6%), all of which could lead to reluctance in using and learning the system and technology.

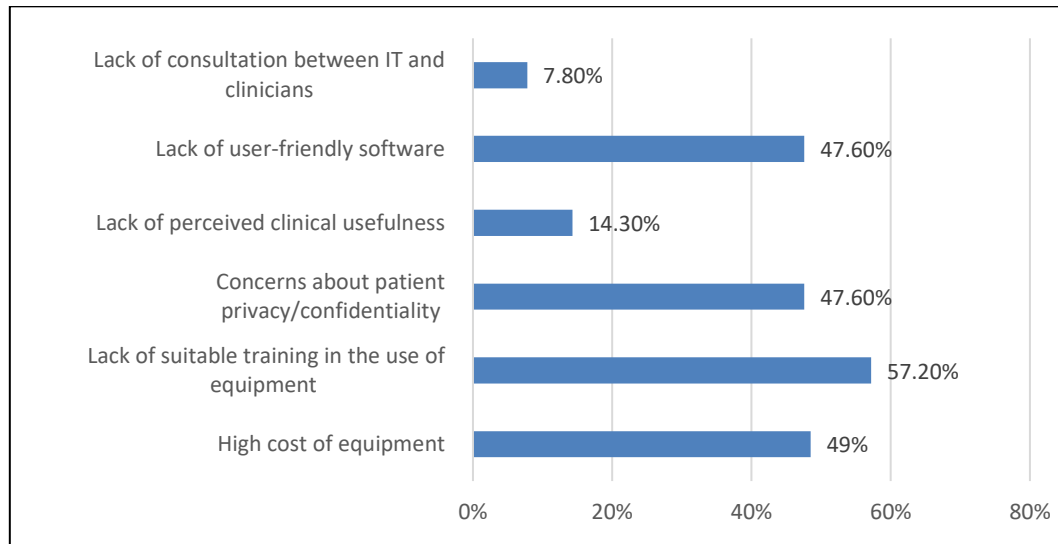


Figure 3: Barriers to the Use of Telerehabilitation Systems

Discussion

This study indicated that physiotherapists in Malaysia had positive perceptions of telerehabilitation and an interest in acquiring the skills required to implement telerehabilitation in the workplace. The majority of participants agreed that telerehabilitation is a viable option for providing patients with physiotherapy services, particularly during the COVID-19 pandemic. This finding is comparable to studies conducted in Kuwait, India, Brazil, Belgium, Irish, and Sweden that showed physiotherapists have positive perceptions towards telerehabilitation (Albahrouh & Buabbas, 2021; Bezuidenhout et al., 2022; Buabbas et al., 2022; D'souza & Rebello, 2021; Meireles et al., 2022; Reynolds et al., 2021). The health crisis caused by the COVID-19 pandemic necessitates extensive research into telerehabilitation systems that employ digital technology to provide services. In this study, positive perceptions of this system reveal significant advantages in different aspects, including minimizing cost and travel time and reducing physiotherapy workload. Telerehabilitation's flexibility makes it possible for physiotherapists to use this application to help patients during the COVID-19 pandemic.

Most of the participants believe that telerehabilitation would work in their workplaces. This study demonstrated that the majority of physiotherapists were happy and willing to do physiotherapy remotely using telerehabilitation. This result was consistent with previous studies in which the physiotherapists were willing to use telerehabilitation during the COVID-19 pandemic (Albahrouh & Buabbas, 2021; Bezuidenhout et al., 2022; D'souza & Rebello, 2021). In contrast, a finding by Dierick et al. (2021) shows that physiotherapists refused to use telerehabilitation as they emphasized proper management, including hands-on techniques for musculoskeletal disorders. Touch is essential for conventional face-to-face treatment sessions as it is more engaging for patients and physiotherapists (Bjorbækmo & Mengshoel, 2016; Roger et al., 2002). Providing a face-to-face session for an early assessment and intervention before proceeding with telerehabilitation can be a way to address this issue. Additionally, most physiotherapists in this study would recommend telerehabilitation to their colleagues. This would develop more awareness among physiotherapists who would have previously been

reluctant to try new ways of intervention. Thus, telerehabilitation must be utilized wherever possible to provide patients with more options and physiotherapists with additional means to assist them.

Besides the positive perceptions and willingness, the barriers and challenges to implementing telerehabilitation during the COVID-19 pandemic must be considered and analyzed before it is employed effectively. Several main barriers identified by this study include a lack of appropriate equipment training, user-friendly software, and expensive equipment. Limited ICT equipment and facilities are considered technological barriers and significant obstacles that may prevent physiotherapists from using telerehabilitation (Scott Kruse et al., 2018). Previous studies have reported that inadequate infrastructure, such as poor internet coverage and insufficient internet services, the inaccessibility of telecommunication devices, and a lack of computer literacy, are barriers to telerehabilitation (Cottrell et al., 2017; Wade et al., 2014). The presence and good connection of healthcare and ICT experts could overcome these limitations.

Another concern in this study evolved on patients' privacy and confidentiality when using the telerehabilitation platform. The potential resolution of this concern is by developing policies and regulations for telerehabilitation practice to ensure the safety of both parties, patients, and physiotherapists (Albahrouh & Buabbas, 2021). The previous finding revealed that it is very crucial to provide legal clarification to patients treated through telerehabilitation and keep the data in the cloud or backup (Albahrouh & Buabbas, 2021; Meireles et al., 2022). Additionally, the ability of physiotherapists to use existing ICT systems will impact the likelihood of employing telerehabilitation (Albahrouh & Buabbas, 2021; Bezuidenhout et al., 2022; D'souza & Rebello, 2021). This survey showed that improved comfort and familiarization with ICT will boost the probability of using telerehabilitation. This finding was reinforced by Tousignant et al. (2011), which demonstrated that healthcare providers who became more familiar with technology would be more comfortable providing healthcare services over time.

Conclusion

The pandemic of COVID-19 brings many destructions in the healthcare sector, particularly in physiotherapy service. During the outbreak, telerehabilitation emerged as a viable approach as a modern tool to deliver the service. Overall, the study showed that most physiotherapists in Malaysia have positively perceived telerehabilitation and are willing to use this application to provide services during the COVID-19 pandemic. This study has provided preliminary information regarding the use of telerehabilitation in physiotherapy services. Decision-makers in healthcare should evaluate the use of telerehabilitation and develop policies and guidelines to manage telerehabilitation services in Malaysia. To assist the adoption of telerehabilitation for physiotherapy services, it is recommended that technical and organizational support be provided to resolve the technological needs and to establish the necessary policies.

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