

PHYSICAL THERAPISTS' PERCEPTION AND UTILIZATION OF DIGITAL REMOTE PHYSICAL THERAPY DURING COVID-19 PANDEMIC IN THE PHILIPPINES: AN ONLINE CROSS-SECTIONAL STUDY

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ABSTRACT

The emergence of COVID-19 in the Philippines disrupted traditional physical therapy rehabilitation and introduced the alternative system of digital rehabilitation in order to maintain the delivery of health services within established health and safety protocols. Physical therapists (PTs) perceived utility as a vital predictor of acceptance and present and future use of this platform. This study describes and correlates the perception and utilization of physical therapists in the Philippines of digital remote physical therapy during this period. An adapted cross-sectional questionnaire was distributed among members of the Philippine Physical Therapy Association (PPTA) via an online link and in-person recruitment in hospitals and clinics. The 23-item survey was subdivided into the following sections: demography, perception, and utilization of digital remote physical therapy. Demographic variables were described through their frequency and percentage. Statements in the rest of the section were scored using a 5-point Likert scale, averaged for a corresponding verbal interpretation, and ranked. The Pearson correlation method determined the relationship between perception and utilization. The majority of the respondents (n=60) were female (60%), between the ages 26-30 years old (41.67%), and worked as a physical therapist for 1-5 years (50%). The participants of the study had a total of 60 physical therapists in the Philippines who practiced digital remote (60% female, the majority drawn from the age range of 26-30 years old, with mean working experience of 1-5 years). Physical therapists in the Philippines were found to have a neutral perception of digital remote physical therapy during the COVID-19 pandemic ($\mu=2.67$), showing they rarely utilized digital technology, and by extension practiced digital remote physical therapy, during the COVID-19 pandemic ($\mu=2.31$). There is a strong correlation between the physical therapists' level of perception and utilization of digital remote physical therapy during the COVID-19 pandemic, indicating that whether the perception level is high or low, the level of utilization will be the same. In this case, it was found that physical therapists in the Philippines exhibited a low degree of perception and therefore a low utilization. The extent of its practical application was decidedly substantially limited in a majority of patient management and services, therefore marking the low indication of its overall utilization.

Keywords: Digital physical therapy, Remote physical therapy, COVID-19 pandemic, Perception, Utilization

INTRODUCTION

According to a report in 2017 by a joint task force of the World Confederation for Physical Therapy (WCPT) and the International Network of Physiotherapy Regulatory Authorities (INPTRA) defined this digital physical therapy practice as “a term used to describe health care services, support, and information provided remotely via digital communication and devices.” On that note, the emergence of SARS-CoV-2 and the spread of the current COVID-19 pandemic disrupted face-to-face consultation and in-clinic rehabilitation, and when forced to adapt, digital physical therapy offers the platform suitable to maintain the delivery of health services within established health and safety protocols. In this ever-shifting scenario, digital remote physical therapy is put to the challenge. Leochico (2020), found that in the Philippines when the practice was attempted to be explored, a number of limitations were experienced. Adding to this, Kruse, et al. (2018) stressed one of the significant barriers to implementing well-organized telemedicine was the healthcare providers’ resistance to change. Thus, making technology acceptance a vital predictor of present and future use of digital physical therapy. The aim of this study was to describe the perception and utilization of physical therapists in the Philippines of digital remote physical therapy during the COVID-19 pandemic, as well as their relationship, marking the width of digital remote physical therapy’s sustainability and utility.

LITERATURE REVIEW

Synthesis of the Art

It is known that the internet has features for developing telerehabilitation structures and methods that can be scalable all over the world. Digital remote physical therapy provides access to hard-to-reach areas and populations in both rural and urban settings, as well as the capacity to expand services to incorporate specialized services. In light of the COVID-19 pandemic, telerehabilitation plays a key role in lifting the load for all individuals involved. Filipino physical therapists who accepted the shift of rehabilitation service managed to adopt the method during the pandemic, and their perceptions and experiences can be used as a baseline in formulating practice-based guidelines and strategies to improve the conduct of telerehabilitation in the country. The most important idea is that usability is key to the adoption of technology; therefore, studies geared toward understanding the intricacies surrounding this concept reflect longevity and acceptance of remote physical therapy. On that note, the researchers formed the goal of gaining insight on what is the actual use of digital remote physical therapy through the physical therapists who have first-hand experience in its structure.

Barriers of Telerehabilitation and Related Medical Branches

Barriers of telerehabilitation and related medical branches were discussed by Shenoy and Shenoy (2018), Damhus et al. (2018), Aderunmu (2020), together with Aloyuni (2020) and found that the primary barriers to using telerehabilitation were technical issues, staff skill issues, high-cost implications, provider's willingness, and the location of the health care institute. Hall et al. (2021) analyzed Caregiver Engagement, Technology, and Resilience for the effectiveness of telehealth. Palacios-Cea et al. (2021) identified specific barriers in a hospital setting, such as redistribution and integration of physical therapists, telerehabilitation, post-COVID units, and outpatient treatment.

Perceptions of Allied and Non-Allied Health Professionals on Telehealth

Albahrouh and Buabbas (2021) concluded that most physical therapists in Kuwait had a positive perception and willingness to telerehabilitation as an option in providing healthcare services during the COVID-19 pandemic. Bull et al. (2017) and Randall et al. (2016) targeted undergraduate students and it also resulted in positive perceptions toward telehealth systems such as teleconferencing, although they viewed it to be less helpful and harder to use in both simulated and clinical settings. However, Capellan and Sineus (2019) reported that physical therapists lack experience in using technology.

Attitude of Health Care Practitioners and Patients Towards Telehealth

Rettinger, et al. (2021) found out that, only a very tiny percentage of the survey respondents said that they believe teletherapy works better than face-to-face therapy. In contrast with that, Saaei and Klappa (2021) stated that participants were able to articulate obstacles and possibilities associated with their own telerehabilitation experiences, and telerehabilitation was used more frequently during the COVID-19 pandemic. In relation to that, Aloyuni, et al. (2020) PTs reported that telerehabilitation has been found to be dependable and valid in PT circumstances and will increase health care quality. Lastly, Sidelil, et al. (2021) found that the majority of the health professionals had a solid understanding of Telerehabilitation-based therapy services.

Adoption and Acceptance of Clinicians and Patients Using Telerehabilitation

Leochico (2020) concluded that the adoption of telerehabilitation in developing countries will be gradual as this pandemic continues to hinder the scope of medicine in the country. In relation to that, Niknejad, et.al. (2021) also stated that the research on the adoption of telerehabilitation is still developing and needs more attention from researchers working in health care. While Almojaibel, et al. (2020) indicate a positive intention in using telerehabilitation by the health care practitioners. Milani, et al. (2021) and Tanner et al., (2020) examined the feasibility and acceptability of therapists and patients and had common findings which are beneficial and useful for the patients and found the telerehabilitation services acceptable. Tyagi et al., (2017) stated that the attributes of patients are important factors in the adoption and compliance with telerehabilitation interventions.

Advantages and Disadvantages of Telerehabilitation Prior and During the Covid-19 Pandemic

Peretti, et.al. (2017) and Mills, et.al. (2020) stated that the advantages of telerehabilitation are social distancing, time-saving, and money as well as there is no need for travel specifically for immobile patients and living in rural areas. The disadvantages stated are limited flexibility in using many medical devices and technological difficulties that could cause misunderstandings. Mubaraki, et.al (2021) noted that using telemedicine enhances the quality of care, provides support, and improves the compliance of patients. However, more than half of the respondents agreed that using telemedicine could result in misdiagnosis because of a lack of physical examination. Lee (2020) also stated that telerehabilitation improved access and high-quality services while the disadvantage is people are forced to adopt and use telehealth which results in a lack of knowledge and insufficient training for the service users and providers.

METHODOLOGY

Research Design

This online cross-sectional study was descriptive in nature as it aimed to discuss the perception of physical therapists on remote digital physical therapy grounded on its utilization, ultimately reflecting the practitioner's acceptance of the practice amid the COVID-19 pandemic. The two variables and their relationship formed the core data of the study.

Population and Inclusion Criteria

The population of the study was composed of licensed physical therapists who are also members of the Philippine Physical Therapy Association (PPTA). The actual sample was chosen through a non-probability sampling technique based on the following inclusion criteria: 1. The subjects have to be members of the Philippine Physical Therapist Association (PPTA); 2. The subjects' age ranges from 22 to 45; 3. The subjects are physical therapists who worked in rehabilitation centers in the midst of the pandemic; and, 4. The subjects provided online physical therapy.

Instrumentation and Scoring

A 23-item adapted cross-sectional online questionnaire from Rausch et al (2021) consisting of 23 closed-ended questions further divided into three areas was used for the study. The first section focused on the demography of the respondents. The second and last sections were modified to narrow down on statements specific to the perception and utilization of digital remote physical therapy respectively, quantifiable through a 5-point Likert scale. The agreement variation and frequency variation were applied for scoring perception and utilization, correspondingly. Accordingly, a pilot test of the survey was performed with five bachelor's degrees in physical therapy graduates who have yet to practice professionally. The original questionnaire was similarly piloted and tested on four licensed physical therapists for language validity and question reliability.

Data Gathering Procedure

Following a letter of approval from the university's physical therapy department, correspondence with the target population, the Philippine Physical Therapist Association (PPTA), started. After a lengthy review of the material, permission was gained to reach out to PPTA members by posting the survey link on their available social media platforms. The survey questionnaire via Google Forms was regularly screened to ensure only responses from individuals who fit the criteria are included in the data of the study. During the initial data collection, an unexpectedly low turnout of participants from the online survey prompted the recruitment of physical therapists from rehabilitation clinics and hospitals. Protocols from each establishment were followed for administrative approval in conducting the survey. In fulfillment of the inclusion criteria, on-hand questionnaires were produced and handed out to willing participants. After the data collection, the data from both the online survey and on-hand questionnaires were tallied by section in tabular form. Demographic variables were described through their frequency and percentage. For the perception and utilization section, scores for each statement were averaged for a corresponding verbal interpretation and ranked. The Pearson correlation method was used to determine the relationship between perception and utilization of digital remote physical therapy.

RESULTS

The demographic information of the respondents (Table 1) showed that the majority of the respondents ($n = 60$) were female, between the ages 26-30 years old, and worked as a physical therapist for 1-5 years. Furthermore, the divide between the representation of age range, favoring younger participants indicated digital physical therapy was practiced more by younger participants, and they were better reached in the online survey.

Perception

The data on the first 10 items in the survey questionnaire pertaining to respondents' perception of digital remote physical therapy, as well as the legend of the 5-point Likert scale scoring method used is presented in Table 2. The majority of the following results indicated a neutral viewpoint among statements 4, 8, and 9. Most of the respondents only agreed with statements 1 and 2 (helpful in maintaining communication during the COVID-19 pandemic). But on the other hand, respondents disagreed with statement 3 (communication comparison pre and during the pandemic), mirroring the disagreement on statement 5 which indicates that there was a better quality of therapeutic interventions through the use of digital remote physical therapy. The findings also showed that the respondents disagreed with statements 6 (appropriate use in place of practice) and 7 (appropriate regardless of impairment severity) which caused them to also disagree with statement 10, referring to the use of digital physical therapy even after the pandemic and ranked at 7. Overall, the following results were obtained indicating a neutral perception with an overall mean of 2.67.

Utilization

The third and final section of the questionnaire measured research participants' use of digital remote physical therapy, as well as the legend of the 5-point Likert scale scoring method used is presented in Table 3. With a mean of 2.75 and ranked 1, the first statement was indicative that generally, the respondents sometimes employed the use of digital tools in their professional practice of physical therapy. Statements 2 and 3 (patient's history taking and examination) both initial parts of the evaluation scored low. On another note, the rare usability of digital PT in examination and evaluation in statement 3 (necessity of physical contact) further affirmed the low scores for diagnosis and prognosis indicated in statements 4 and 5. Statements 7 (patient education) and 9 (treatment adherence) implied a greater utilization of digital tools. These are considered later but maintained steps in patient management. In contrast, statements 10 (therapy monitoring), 6 (treatment provision), and 8 (clinical course follow-up) were rated low, despite having a similar focus on patient communication and observation. Overall, the following results were obtained indicating a rare utilization with an overall mean of 2.31.

Relationship of Perception and Use

The data on the correlation between physical therapists' perception and utilization of digital physical therapy are presented in Table 4. A Pearson correlation coefficient was computed to assess the relationship between the level of perception and utilization of digital remote physical therapy during the COVID-19 pandemic. There was a strong correlation between the two variables, $r = .418$, $N = 60$; furthermore, it was statistically significant ($p < .00$), and the null hypothesis was rejected. This means that respondents with a high level of perception of

digital remote physical therapy tended to have high utilization of digital remote physical therapy during the COVID-19 pandemic.

Table 1
Respondents' Demographic Profile

	Classification	Frequency	Percentage (%)
Gender	Male	24	40
	Female	36	60
	Total	60	100
Age	25 and below	17	28.33
	26-30	25	41.67
	31-35	7	11.67
	36-40	6	10
	41-45	5	8.33
	Total	60	100
Work Experience	1-5 years	30	50
	6-10 years	18	30
	11-15 years	8	13.33
	More than 15 years	4	6.67
	Total	60	100

Table 2
Respondents' Level of Perception of Digital Remote Physical Therapy during the COVID-19 Pandemic

	Weighted Mean	Verbal Interpretation	Rank
1. The use of digital remote physical therapy minimizes disruption of physical therapy service delivery during the pandemic.	3.48	Agree	2
2. The use of digital remote physical therapy is helpful in maintaining communication/personal contact with my patients.	3.72	Agree	1
3. The communication/personal contact with my patients was better during the pandemic compared to the times before the pandemic.	2.28	Disagree	8
4. The use of digital remote physical therapy is helpful in performing therapeutic interventions (e.g. instruction and counseling via video).	2.67	Neutral	5
5. The quality of the therapeutic interventions (e.g. instruction and counseling via video) was better during the pandemic compared to the times before the pandemic.	2.15	Disagree	9
6. Digital remote physical therapy is appropriate in my place of practice, based on current conditions.	2.50	Disagree	6
7. Digital remote physical therapy is appropriate regardless of impairment severity.	1.90	Disagree	10
	Weighted Mean	Verbal Interpretation	Rank
1. I use digital tools for professional purposes	2.75	Sometimes	1
2. I use digital technology for history taking for the patient management/phase of therapy	2.40	Rarely	4
3. I use digital technology for examination and evaluation for the patient management/phase of therapy	2.05	Rarely	7
4. I use digital technology to define a diagnosis for the patient management/phase of therapy	2.00	Rarely	10
5. I use digital technology to identify a prognosis for the patient management/phase of therapy	2.03	Rarely	9
6. I use digital technology to provide the treatment for the patient management/phase of therapy	2.05	Rarely	7
7. I use digital technology for patient education for the patient management/phase of therapy	2.72	Sometimes	2
8. I use digital technology to follow up the clinical course for the patient management/phase of therapy	2.25	Rarely	5
9. I use digital technology to improve the treatment adherence (e.g. sending reminder) for the patient management/phase of therapy	2.65	Sometimes	3
10. I use digital technology for therapy monitoring (e.g. outcome assessment) for the patient management/phase of therapy	2.15	Rarely	6
	Mean	Verbal Interpretation	
	2.31	Rarely	

Legend: 4.21 – 5.00–Always; 3.41 –4.2–Often; 2.61 – 3.40 –Sometimes; 1.81 – 2.6– Rarely; 1.0 – 1.80–Never

Table 3
Respondents' Level of Utilization of Digital Remote Physical Therapy during the COVID-19 Pandemic

	Weighted Mean	Verbal Interpretation	Rank
1. I use digital tools for professional purposes	2.75	Sometimes	1
2. I use digital technology for history taking for the patient management/phase of therapy	2.40	Rarely	4
3. I use digital technology for examination and evaluation for the patient management/phase of therapy	2.05	Rarely	7
4. I use digital technology to define a diagnosis for the patient management/phase of therapy	2.00	Rarely	10
5. I use digital technology to identify a prognosis for the patient management/phase of therapy	2.03	Rarely	9
6. I use digital technology to provide the treatment for the patient management/phase of therapy	2.05	Rarely	7
7. I use digital technology for patient education for the patient management/phase of therapy	2.72	Sometimes	2
8. I use digital technology to follow up the clinical course for the patient management/phase of therapy	2.25	Rarely	5
9. I use digital technology to improve the treatment adherence (e.g. sending reminder) for the patient management/phase of therapy	2.65	Sometimes	3
10. I use digital technology for therapy monitoring (e.g. outcome assessment) for the patient management/phase of therapy	2.15	Rarely	6
Mean	2.31	Rarely	

Legend: 4.21 – 5.00–Always; 3.41 –4.2–Often; 2.61 – 3.40 –Sometimes; 1.81 – 2.6– Rarely; 1.0 – 1.80–Never

Table 4
Relationship of the Level of Perception and Utilization of Digital Remote Physical Therapy during the COVID-19 Pandemic

Subjects	r	p-value	Interpretation
Perception and Utilization	.418**	.000	Significant

**Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION

This online cross-sectional study relates to the primary purpose of examining the digital practice of physical therapy in the Philippines through their perception and utilization and determining the relationship therein in the context of the COVID-19 pandemic. As such, the research questions circled around these variables and their relationship together with the demography. Correspondingly, the demographic profile of the 60 physical therapist respondents showed that, though not central to the study, the data on the respondents' gender implies a greater number of female physical therapists were inclined and able to deliver physical therapy services using digital technology.

The gradient of age ranges also suggests that digital physical therapy was practiced more by younger participants, indicating that the research results might not be generalizable to all ages in the approach of digital physical therapy, particularly since age played in the exposure and ease of use to the platform or digital technology in general.

As for work experience, the number of years for which respondents worked as physical therapists were evidence of their familiarity with traditional rehabilitation, which can be related to reluctance in switching to digital PT, a fairly novel concept in comparison especially in the Philippines. Alternatively, for physical therapists with fewer years on their belt, the innovation or switch to digital PT may be more well-received, as they are less accustomed to usual PT. The neutral viewpoint in terms of perception of digital remote physical therapy could be attributed to the respondents' limited knowledge and even more constrained brief exposure to it, which in turn was a consequence of the adoption of the modality during the COVID-19 pandemic.

Though the way in which the platform helps in minimizing disruption and maintaining contact with the patients during the COVID-19 pandemic was affirmed, respondents still see it as inferior in comparison to the quality of communication pre-pandemic. Further disagreements in terms of appropriate use in place of practice and suitability regardless of impairment severity were also shown, conceivably due to the challenges digital remote physical therapy consists of which are skepticism, lack of knowledge, awareness, slow internet, etc. Also, telerehabilitation's appropriateness will be dependent on the person's case or situation and the use of it might not be the best option for everyone's impairment severity. In the aspect of utilization, it was found that though digital tools were used professionally, the found usability was merely applicable to certain aspects of PT care and management. The disconnect could be interpreted to mean that the existing platform's inaptness to provide task-specific software and applications, due in part to digital physical therapy's hasty implementation with the COVID-19 pandemic, is unable to immediately provide standardized policies and guaranteed data protection and patient safety.

However, greater utilization of digital tools when it comes to patient education and reminding to improve adherence to treatment were also noted. They are both purely centered on the communication and observation aspect, signifying procedures similar to this are more viable to conduct digitally than physical contact-dependent ones. In contrast, digital technology for therapy monitoring was rated low, despite having a similar focus on patient communication and observation. The disparity could imply that there is an existing aspect of therapy monitoring that is harder to access in digital platforms, such as performance-based, observer-reported, and clinician-reported outcome measures, typically requiring a longer time period and in-depth interaction to properly assess changes. In connection, patient education and following up the patient's clinical course, both of which in some ways are the main application of physical therapy skills and rehabilitation interventions. This could suggest that going from patient education to treatment proper, the usability of digital tools was diminished. In consideration, there is the inability to use necessary materials and machines on-screen, set-up difficulties depending on the setting and modality, and limited scope of exercises to be performed without equipment or assistance.

Given the strong correlation between perception and utilization, it can be said that impartial perception was mirrored in the utilization of digital remote physical therapy. The neutral perception of digital remote physical therapy was based on the limited knowledge and exposure of the respondents, evidently prompting the respondents to neither have a positive nor negative inclination toward it. It can be drawn back to the gap between the theoretical potential of digital PT and the actual experience of the respondents, made significantly different due to internal challenges—technical readiness, digital literacy, etc.— and external challenges (lack of standardized guidelines, data privacy issues, software interface problems) upon its introduction during the COVID-19 pandemic. Moreover, the same gap can also be

directly linked to what part of physical therapy management can be appropriately performed, and what cannot, directly influencing the usability of digital physical therapy. The extent of its practical application was decidedly substantially limited in a majority of patient management and services, therefore marking the low indication of its overall utilization.

CONCLUSIONS

During the COVID-19 pandemic in the Philippines, physical therapists' perceptions toward digital remote physical therapy were neutral, countering the statistically low use of the modality. The neutral perception of digital remote physical therapy is attributed to the fact that the bulk of knowledge and experience regarding it is generally insufficient to form a positive or negative inclination toward it. The significant difference was due in part to the technology behind it being unsuitable still to cater to a majority of impairments regardless of nature and degrees of severity as well as to implement patient management and specific phases of physical therapy care and management, therefore creating constraints on service delivery and despondency from healthcare providers and establishments to adopt it.

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