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Study Protocol

Commonly Used Outcome Measurement Tools in Pediatric Physical Therapy Telerehabilitation in the Philippines: A Quantitative Cross-Sectional Descriptive Study Protocol

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Abstract

Background: With the COVID-19 pandemic, the need for social distancing presents an apparent barrier to in-clinic consultation. Therefore, the adoption of telerehabilitation has rapidly increased to improve access and minimize cross-infection risk to patients. Nevertheless, Filipino pediatric physical therapists must ensure that they conduct evidence-based procedures for specific tests and measures to determine patient outcomes. The utilization of outcome measurement tools (OMTs) enhances the quality of assessment in clinical decision-making and provides a credible and reliable justification for treatment on an individual patient level. However, a lack of information on utilizing OMTs in telerehabilitation by pediatric physical therapists internationally and locally is evident. **Objective**: To determine the most common pediatric OMTs used in telerehabilitation by Filipino pediatric physical therapists catering to 0 to 21-year-olds in the Philippines. **Methods**: The study will use an adapted questionnaire to gather data on common OMTs used during pediatric telerehabilitation. Phase I will include the validation of the 15-item adapted questionnaire by determining the content validity index. In Phase II, participants will be recruited through email and social media. Descriptive statistics will be used to report participants' responses. **Expected results**: In Phase I, the expected result is a valid and reliable questionnaire to investigate the common OMTs used in pediatric telerehabilitation for Phase II. The results will be synthesized to inform other researchers and clinicians and encourage non-users to utilize OMTs despite the challenge of the pandemic. The study can give insights to stakeholders on what OMTs optimize pediatric telerehabilitation.

Key Words: *Pediatric physical therapist, outcome measurement tools, telerehabilitation*

INTRODUCTION

Pediatric physical therapists (PTs) work with children and their families to provide interventions promoting children's ability to function independently and to actively participate in their home, school, and community environments.[1] Pediatric PTs aim to improve children's motor skills in respect of delayed motor development, strength, endurance, balance, and coordination.1 According to World Physiotherapy,[2] the latest statistics (as of June 30, 2019) relating to the physical therapy profession reveal that 173,294 physical therapists work in the Asia Western Pacific region, including the Philippines, with 20% specializing in pediatrics. On May 14, 2017, the Philippine Physical Therapy Association (PPTA) launched its own pediatrics special interest group entitled PPTA Pediatrics Special Interest Group (PPTA Pedia SIG) and held a seminar on pediatric evaluation tools.[3] PPTA Pedia SIG follows PPTA's stated summary of the role of a PT, which includes examining individuals or

groups through history taking, screening, using specific tests and measures, and re-examining patients or clients as necessary to determine outcomes.[4]

Outcome measurement tools (OMTs) are standardized instruments evaluated for their psychometric properties and used to measure the change in a patient's health status through quantitative assessment of function.[5] Pediatric PTs utilize OMTs to quantify children's motor skills and functional development that serves as a basis for establishing a course of treatment necessary for maximal function.[6] In determining the most appropriate outcome measure, Coster[7] reported that it is necessary to consider factors such as dimension, format, reliability, responsiveness, and feasibility of the outcome measure. Common OMTs, according to the American Physical Therapy Association's (APTA), include children's assessment of participation and enjoyment (CAPE) and preferences for activities in children (PAC), CP functional classification systems, and gross motor function measure (GMFM).[8] The utilization of these instruments in the clinical setting has been effective as these standardized outcome measures provide a common language among physical therapists.[9]

During the current COVID-19 pandemic, the adoption of telerehabilitation has rapidly increased to improve access and minimize cross-infection risk to patients.[10] In the Philippine context, telerehabilitation refers to remotely conducting evaluation, consultation, therapy, and monitoring using electronic means to deliver rehabilitative care for patients in different locations, including home, community, nearby health facility, and workplace settings.[11] Eguia reported that video consultations became the most important service delivery strategy for pediatric therapists in response to the COVID-19 lockdown.[12] Zoom has been the most commonly used digital platform for telerehabilitation (72%), followed by Facebook Messenger (28%) and Viber (16%).[12] Reported benefits of telerehabilitation include empowering parents and enhancing their understanding of their children's needs.[12] Furthermore, PPTA has included transitioning to telerehabilitation in its interim recommendations on PT services during the COVID-19 pandemic.[13]

There are no established, validated, or reliable pediatric OMTs for telerehabilitation as yet, but some validated OMTs used in the in-clinic setting may be utilized in the telerehabilitation setting.[14] This strategy was recommended in a study that established a foundation for efficient and effective telerehabilitation visits to pediatric PTs to respond to the barriers caused by the pandemic.[15] The recommended OMTs for pediatric telerehabilitation include physician rating scale (PRS), Edinburgh visual gait analysis, modified Wisconsin gait scale, modified physician global assessment scale (PGA), Penn spasm frequency scale, and the spinal cord injury spasticity tool (SCI-SET). Moreover, assessments in adults receiving assistance from caregivers or self-administering OMTs in the telerehabilitation setting were generally feasible, supported by good validity and reliability, excluding lumbar spine posture and some orthopedic tests.[15]

In Metro Manila, the initial use of OMTs has been investigated by analyzing 96 initial evaluation charts. Three standard OMTs with good psychometric properties were recommended, including gross motor function measure (GMFM), pediatric evaluation of disability and inventory (PEDI), and activities scale for kids (ASK).[16] However, the study revealed that only 18.75% of the 96 initial evaluation charts reported using GMFM. There is currently limited research on OMTs in the telerehabilitation setting, particularly in pediatric physical therapy.[16]

This study aims to determine the most commonly used pediatric OMTs in telerehabilitation by Filipino pediatric PTs in the Philippines.

METHODS

Ethical Considerations. This study was reviewed and approved by the Ethics Committee of the University of Santo Tomas-College of Rehabilitation Sciences. The study abides by the Declaration of Helsinki, National Ethical Guidelines for Health and Health-Related Research of Philippine Health Research Ethics Board, and Data Privacy Act of 2012 (RA 10173).

Study Design. This is a cross-sectional descriptive quantitative study registered under

the Philippine Health Research Registry (Registry ID: PHRR210318-003267). The group will divide the study into two phases, namely Phase I: Validation and Pilot Testing of the Adapted Questionnaire and Phase II: Questionnaire Implementation.

Participants. Participants will be divided according to the two phases of the study.

Phase I: Validation and Pilot Testing of the Adapted Questionnaire. This phase will include a panel of three experts (consisting of one pediatric telerehabilitation practitioner with at least one year of experience and two methodologists or experts in questionnaire validation with at least five years of experience) to validate the content of the adapted questionnaire using content validity index (CVI). The number of experts (n = 3) was deemed adequate for content validation since three to 10 experts is considered the accepted range for raters.[17] After validation, pilot testing will be conducted to determine the survey's duration and obtain feedback on the survey's online format. Experts recommend that the sample size for the pilot test should be 10% of the actual study's projected participants.[18] Hence, pilot testing will include six practicing Filipino pediatric telerehabilitation PTs catering to 0 to 21-year-old patients.

Phase II: Questionnaire Implementation. This phase will include 60 practicing Filipino pediatric telerehabilitation PTs catering to 0 to 21-year-old patients. Demographic characteristics of the participants will include male or female pediatric PTs aged 18 years old and above with years of practice as a telerehabilitation practitioner who may or may not have been using OMTs. Purposive sampling will be used for pilot testing in Phase II by inviting all PPTA Pedia SIG members who meet the inclusion criteria. Snowball sampling and convenience sampling will be applied by sending invitations through email or social media to pediatric rehabilitation centers and clinics throughout the country. Both the pilot testing and Phase II will exclude Filipino pediatric PTs practicing abroad to focus on the current use of OMTs by pediatric PTs based in the Philippines. Nevertheless, the study is not limited to recruiting pediatric PTs treating particular pediatric conditions.

For the sample size calculation of Phase II, the researchers used the sample size calculator from the creative research systems software. The group set the confidence level at 95% to promote evidence-based medicine, while the margin of error is set at 8%. The population of PPTA Pedia SIG stands at 100 members based on its database as of June 5, 2021. Therefore, the researchers will aim for at least 60 participants based on the calculated result.

Setting. The setting of the study will primarily be online platforms. Facebook and Gmail will be used to send invitations for participant recruitment. The research development will mainly be done in the National Capital Region (NCR), but respondents can be from anywhere within the Philippines.

Instrument. A tool formulated by Jette et al.[5] will be adapted. Permission from the author to use the questionnaire was granted. Multiple published studies using the same methodology have similarly adapted the tool.[19,20] These studies determined the use of standardized OMTs and perceptions on the benefits of and barriers to their use.

In terms of adaptation, the only questions to be taken from the original questionnaire are those considered relevant to the study's objective (Supplement A). Questions regarding perceived barriers to and benefits of OMT use and the manner of OMTs used were disregarded since they are not within the scope of the study.

For OMT users, 18 items will be taken from the original questionnaire and split into five sections. The items lifted include Numbers 1-2 from Section 1: Demographics; 47-49 from Section 3: Policies and Procedures for OMT Use in Practice Setting; 63-67 from Section 4: List of OMTs Used in Telerehab; and 53-60 from Section 5: Criteria Used for OMT Selection. Since Numbers 53-60 are formatted as a multiple response type of question, they will be categorized as one question with eight statements. Section 2: Usage or Non-Usage of OMTs will be added to direct participants to the survey content appropriate for them. Furthermore, fields for email address, age, and

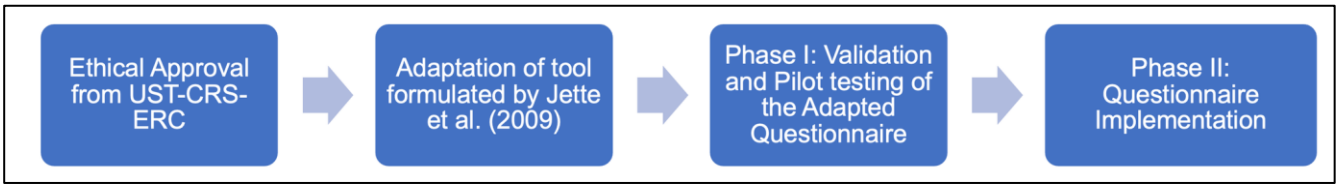
years of experience as a pediatric PT using telerehabilitation will be added to the demographics section. Hence, the adapted questionnaire for OMT users will consist of 15 items. The estimated time to complete the survey will be approximately 10 to 15 minutes.

For non-OMT users, all 21 reasons for the non-usage of OMTs will be adapted from the original questionnaire. The survey for non-OMT users will comprise eight questions and will be divided into three sections: Demographics, Usage or Non-Usage of OMTs, and Reasons for Non-Usage of OMTs. The estimated time for non-OMT users to complete the survey will be only 5 to 10 minutes.

For both phases of the study, Google Form will be utilized, and the "required" option will be applied to all questions to avoid missing data. Each form will contain the participant information sheet (PIS) and informed consent form (ICF), along with the items mentioned above. Completing the survey in the context of telerehabilitation will be emphasized in the survey's instructions. In Phase I, the respondents will be required to input their start time and end time for tracking purposes. A comments section will be included at the end of the pilot test survey for the group to obtain feedback on the Google Form format.

Data Gathering Procedure. Validation of the adaptation of the questionnaire formulated by Jette et al.[5] will be done by inviting the opinions of a panel of experts. Each expert will be asked to rate each item of the adapted questionnaire, using a 4-point Likert scale, as highly relevant (4), quite relevant (3), somewhat relevant (2), or not relevant (1) through an item validity form via Google Form. Item-content validity index (I-CVI) and Scale-level-CVI (S-CVI) will be computed to determine the validity of the individual item and the overall questionnaire.[17]

Fig. 1 Flowchart indicating the flow of the study.



Coordination with PPTA Central and PPTA Pedia SIG will be carried out to allow the dissemination of information on the study. To recruit more respondents, a directory of pediatric centers and clinics in the Philippines offering telerehabilitation will be created. Publication materials and invitation letters, including a sign-up link via Google Form, will be sent to PPTA Pedia SIG, pediatric centers, and clinics where interested participants can input their contact information.

The first six participants who register will be included in the pilot testing. They will receive a link containing the PIS, ICF, and the survey via email. Follow-up notifications will be sent out in cases where a participant could not respond within five days. The notifications will be sent every Saturday of the first two weeks of August 2021. Participants who do not respond after this period will be considered as having withdrawn from the study.

The remaining registered participants will be part of Phase II, and the same procedures will be followed. After the period of data gathering, the accessibility of the online survey will be restricted.

Results of the online survey will be stored in a password-protected Google Drive. The researchers will utilize Google's two-step verification feature to minimize the risk of loss of confidentiality. The Google Drive with the gathered information will only be accessible to an indicated researcher and the study's statistician.

Data Analysis. Validity testing and descriptive statistics will be used for Phase I, while only descriptive statistics will be used for Phase II.

For Phase I, content validity of the adapted questionnaire will be represented using CVI. CVI for items (I-CVI) will be computed to determine the content validity of individual items, while CVI for scale (S-CVI) will be computed to determine

the content validity of the overall scale. Prior to the computation of I-CVI, the relevance rating will be recoded as 1 (relevance scale of 3 or 4) or 0 (relevance scale of 1 or 2).[21] To compute for the I-CVI, the number of experts giving a relevance score of 3 or 4 will be divided by the total number of experts. The recommended acceptable cut-off score of I-CVI with three experts should be 1.[21] For S-CVI, both the universal agreement (UA) among experts (S-CVI/UA) and S-CVI based on the average method (S-CVI/Ave) will be utilized. S-CVI/UA will be computed by dividing all items with I-CVI equal to 1 by the total number of items, while S-CVI/Ave will be computed by dividing the sum of the I-CVI scores by the number of items. Researchers recommend that a scale should comprise of S-CVI/UA ≥ 0.8 and S-CVI/Ave ≥ 0.9 to have excellent content validity.[22]

Moreover, the average duration for completing the survey by the six participants will be computed in the pilot testing for Phase I. Their comments on the questionnaire format will be tabulated and considered when revising the Google Form, if necessary.

For Phase II, SPSS software version 22 and Microsoft Excel will be utilized for data analysis. The answers gathered from the demographic and close-ended questions will be interpreted using frequency and percentage. Similarly, the statistician will tally the responses and determine response frequencies to determine common OMTs used in pediatric telerehabilitation. The analyzed data from Phase II will be reported using textual methods.

EXPECTED RESULTS

The expected result for Phase I is a valid and reliable questionnaire that will be used in Phase II to determine the common OMTs used in pediatric telerehabilitation. The results will be synthesized to inform other researchers and clinicians of the common OMTs used in telerehabilitation and encourage non-users to utilize OMTs. The study can give insights to stakeholders on what OMTs clinicians use to optimize the practice of pediatric telerehabilitation.

Individual author's contributions

A.C. conceptualized the study design and methodology. C.R. provided the standardized questionnaire to be adapted in the study. M.D. and J.T. will contact respondents for data collection. T.M. will supervise data collection. J.R. will supervise the analysis of data. M.R. will perform data cleaning and management. All authors drafted, co-wrote, revised and gave final approval to the version to be submitted for publication, agreeing to be accountable in all aspects of the study protocol.

Disclosure statement

This paper did not receive any funding.

Conflicts of interest

The authors of this paper declare no conflicting interest.

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Supplementary Material

Supplementary Material A. Data Collection Forms for Phase I & Phase II.

Supplementary Material B. Data Collection Summary Tables.

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