



Study Protocol

Experiences and Perspectives of Filipino Rehabilitation Professionals and Patients on Telerehabilitation or On-site Rehabilitation for Managing Low Back Pain: A Phenomenological Study Protocol

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Article Received: July 17, 2024

Article Accepted: January 22, 2025

Article Published: February 15, 2025

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Abstract

Background: Low back pain is a major global cause of disability, typically treated through traditional onsite rehabilitation. However, the advancement of telerehabilitation during the COVID-19 pandemic presents an opportunity to examine its effectiveness as a treatment option for low back pain. This study aims to seek and explore the experiences and perspectives of healthcare professionals about onsite or online management of LBP. **Methods:** The study will employ a phenomenological qualitative study design that will use quota sampling to recruit a total of 16 participants, equally distributed among rehabilitation doctors, physical therapists, barangay healthworkers, and patients with low back pain, coming from hospitals and centers affiliated with the University of Santo Tomas in Metro Manila. Key informant interviews that follow a semi-structured interview format will be conducted either on-site or online, depending on the preference of the invited informant. The NVivo data analysis software will be utilized to produce codes and outline themes from the gathered data. **Expected Results:** The research is expected to highlight the nuanced interplay between individual viewpoints and contextual factors that influence decision-making in rehabilitation settings, besides identifying these themes. Findings will be instrumental in informing best practices for managing low back pain, thereby helping physical therapists determine the most effective treatment approach—whether through telerehabilitation or traditional on-site care. The study can provide actionable recommendations through grounding the implications of the analysis to the anticipated findings that might affect the rehabilitation practices and patient outcomes in the Philippines.

Key Words: *telerehabilitation, On-site Rehabilitation, Low Back Pain, Phenomenological Study*

INTRODUCTION

Telerehabilitation refers to the remote delivery of rehabilitation services via communication technologies such as video conferencing. It encompassed physical therapy services, including assessment, intervention, monitoring, supervision, and education.¹ Given its virtual nature, telerehabilitation required patients and physical therapists to access internet connections, video conferencing software, and compatible devices such as phones, tablets, or computers.

The use of telemedicine dated as far back as the 1990s, but it surged significantly in 2020 as a

result of the COVID-19 pandemic, which necessitated social distancing to reduce physical contact between patients and healthcare providers.² In the Philippines, the Department of Rehabilitation Medicine (DRM) of the University of the Philippines - Philippine General Hospital (UP-PGH) expanded its community-based telerehabilitation program, Introducing Telerehab As a Way to Access General Rehabilitation Medicine Services (ITAWAG), as a response to the pandemic. The Philippine General Hospital provided care under this program for various conditions including transfemoral amputation, supraspinatus

tendonitis, and cervical radiculopathy, reporting improvements in physical, communication, behavioral, and neurological states.³

After the pandemic ended, telerehabilitation remained a viable mode of delivery of services. At that time, physical therapists in the United States who were involved in areas such as outpatient orthopedics, geriatrics, neurorehabilitation, acute care, pediatrics, and cardiopulmonary care reported that they had increased virtual consultations since the pandemic, in addition to their on-site visits. Most of these therapists leaned on applications and software as alternative formats for prescribing home exercise programs, which in turn gave patients an opportunity to understand the exercises better.⁴

Telerehabilitation allowed for the accessibility and convenience of receiving healthcare at home, which benefited patients who had difficulty moving from place to place (e.g., wheelchair-dependent patients). It also minimized exposure to diseases in hospitals and centers, allowing patients prone to sickness to remain safe. Patient satisfaction studies indicated that telerehabilitation reduced hospital admission time, avoided unnecessary travel and expenses, and could be adapted to various resource levels.⁵ Telerehabilitation also allowed for new ways to provide patient education through operating different websites or mobile applications that enabled real-time data sharing between patient and therapist and made home exercises easier to understand.⁶ In terms of patient preference, most of the general population perceived that telerehabilitation could help address their general musculoskeletal conditions such as osteoarthritis and that they preferred a synchronous approach predominantly in the form of video conferencing. However, concerns persisted among patients about the lack of hands-on interaction and the cost parity with on-site care. Implementation barriers included digital literacy issues, preparation challenges, and reimbursement concerns.⁷

While the benefits and effectiveness of telehealth were well-documented, there was a notable gap in the development of tools like scoring matrices for recommending telerehabilitation over on-site care. Existing scoring matrices primarily focused

on diagnostic procedures rather than aiding clinicians in decision-making for telerehabilitation versus on-site care.

Low back pain was defined as pain, muscle tension, or stiffness that could be felt in a certain area below the costal margin and above the inferior gluteal folds.⁸ It continued to exist as the leading cause of years lived with disability (YLDs) among individuals globally.⁹ Over the years, the management of low back pain evolved with a certain emphasis on telemedicine. Telerehabilitation showed promising results in managing conditions like osteoarthritis, low back pain, hip and knee replacements, multiple sclerosis, cardiac and pulmonary conditions, and Parkinson's disease based on existing evidence from clinical trials.¹⁰ Therefore, due to its efficacy in treating low back pain and its high prevalence, this condition was selected as the focus for the study.

Although there had been studies comparing assessment outcomes between telerehabilitation and on-site care, existing studies regarding treatments for low back pain were mostly centered on only one of these strategies and therefore failed to provide a direct comparison. This could only be acquired through gathering insights from healthcare workers who practiced both telerehabilitation and on-site care as their primary mode of delivering treatments. Hence, this study aimed to explore healthcare professionals' and patients' experiences and perspectives on managing low back pain through both telerehabilitation and on-site care. Using a qualitative approach allowed for a deeper understanding of exercise adherence as it delved into the personal experiences of the participants, capturing factors such as socio-economic status, cultural beliefs, individual preferences, emotional and psychological aspects that might have influenced their adherence. Furthermore, it offered valuable insights into evolving perspectives on telerehabilitation that helped inform best practices and improve outcomes in rehabilitation settings. Such findings could assist physical therapists in recommending the most effective management strategy for low back pain—whether telerehabilitation or on-site care—and also guide the eventual development of a scoring matrix that could streamline this decision process.

METHODS

Ethical Considerations. The study was reviewed and approved by the University of Santo Tomas - College of Rehabilitation Sciences Ethics Review Committee (UST-CRS ERC). It adhered to the ethical principles outlined in the Declaration of Helsinki, the Ethical Guidelines on Health-Related Social Research by the Philippine Health Research Ethics Board, and the Data Privacy Act of 2012.

Study Design. The study adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines to ensure transparency and rigor in its design and reporting.¹¹

It will consist of key informant interviews. A phenomenological qualitative study design was employed to conduct these interviews with rehabilitation doctors, physical therapists, barangay health workers, and patients with low back pain. Semi-structured interviews explore factors influencing the choice between recommending either telerehabilitation or on-site care rehabilitation for patients with low back pain, such as efficacy, patient preferences, accessibility, and potential implementation barriers.

This phenomenological approach was utilized to deeply investigate the lived experiences and perceptions of healthcare professionals and patients regarding telerehabilitation and on-site rehabilitation for low back pain. Phenomenology is ideal for this study as it facilitates a thorough exploration of the subjective experiences and meanings associated with each rehabilitation mode, illuminating the nuances of decision-making processes. By adopting a phenomenological perspective, the study revealed the intricate interplay between individual viewpoints, contextual factors, and the personal experiences of healthcare professionals and patients with low back pain.

The results will be used in a bigger four-stage research project in developing a scoring matrix to be used by professionals in making recommendations on the most suitable modes of delivery of physical therapy. Further stages will involve development of the content of the

scoring matrix from interview data and literature review, validation of the matrix with expert reviewers, and pilot study with physical therapists and physicians at the UST PT Clinic.

Participants. Key informants were selected based on their expertise in managing low back pain and their familiarity with telerehabilitation and on-site rehabilitation approaches. The participants will include rehabilitation doctors, physical therapists, telerehabilitation patients, and healthcare workers involved in telehealthcare implementation (e.g., barangay healthcare workers). Key informants must have at least three years of experience in both on-site and telehealth care, following similar parameters used in similar studies.¹¹

Key informants must possess specific qualities: (1) a role in the community, (2) knowledge of the topic, (3) willingness to participate, (4) communicability, and (5) impartiality.¹² While the last three qualities will be screened through the participant information sheet and informed consent form, the first two qualities will be assessed based on the informants' relationship to low back pain management. Rehabilitation doctors, physical therapists, and healthcare workers are integral to the community as healthcare providers, with extensive knowledge and interaction with low back pain patients. The role of patients with low back pain is to provide insight into their own experiences, assuming they have been properly diagnosed.

Quota sampling will be employed to ensure four members in each key informant group.¹³ A total of 16 key informants will participate, which suggests that interviewing more than 10 key informants can yield significant information.¹⁴ This also aligns with the UCLA Center for Health Policy Research's 2023 recommendation of 15-25 key informants. Key informants in this study will contribute expertise without being study participants, unlike in other recent studies which gave them dual roles.¹⁵

The recruitment process will include: (1) Identification of Potential Key Informants, (2) Invitation, (3) Inquiries, (4) Scheduling, (5) Interview proper, and (6) Follow-Up.¹⁶

All the informants were from healthcare centers currently affiliated with the University of Santo

Tomas - College of Rehabilitation Sciences (UST CRS) and located within Metro Manila. Potential key informants will be identified through academic literature, professional networks, or expert recommendations. After validation by the research team, personalized invitations will be sent via email or letter, including a brief introduction to the research project and its purpose. Detailed information about the interview process, including format, duration, and topics, will be provided upon inquiry or during the acceptance of the invitation. Flexible scheduling options will be offered to accommodate the availability and preferences of key informants, with interviews conducted at mutually agreed times and platforms. Follow-ups will ensure transparency and address any inquiries from the informants.

Of the 22 invited UST-CRS-affiliated healthcare centers, only two agreed to participate due to the following reasons: the other centers did not conduct telerehabilitation and/or do not handle low back pain patients. Several centers did not respond, despite multiple follow-up attempts.

Setting. Interviews will be conducted at the University of Santo Tomas - Manila campus in Sampaloc, Manila, Metro Manila, or via video conferencing platforms (ZOOM, Microsoft Teams, Google Meet) based on the preferences and convenience of the informants. This is also in consideration of all the informants coming from healthcare centers currently affiliated with the University of Santo Tomas and located within Metro Manila.

The study will be conducted from December 2023 to December 2024.

Tools and Instruments. Guide questions for the key informant interviews have been developed and will be validated by a third-party expert on clinical assessment and approved by the ethics and technical review committees. The guide questions were contextualized to each of the target participants: rehabilitation doctors, physical therapists, patients, and healthcare workers. It largely revolves around the participants' experience of both on-site and telerehabilitation, and suggestions on

improvements that can be made to the latter service delivery mode.

The questionnaire will undergo a pilot test with a health professional that fits the study's inclusion criteria for a key informant, but separate from the participants, to ensure clarity and relevance to the target population. During the interviews, a smartphone owned by one of the research team members will be used to record the sessions.

Data Gathering Procedures.

Research Team. The research team comprises five student researchers (three males and two females) currently completing their Bachelor of Science in Physical Therapy degree, and two professionals (both females) who are registered physical therapists in the Philippines—one holds a Master of Science in Physical Therapy degree, and the other has a Master of Arts in Special Education. As practitioners, the researchers deal with patients firsthand, wherein low back pain represents a significant portion in terms of the most common patient complaints. However, these experiences are limited to on-site care and do not encompass further personal insights about treating low back pain through telerehabilitation. Comparing different modes of delivering healthcare ensures that evidence-based strategies are applied and directed towards improved efficacy and convenience for both the therapist and the patient. Additionally, faculty authors have previous research using qualitative methods. Figure 1 shows the sequential order of steps during the data gathering. The process started with approval from the Ethics Review Committee and ended with data screening.

Key Informant Interviews. Key informant interviews will be conducted with experts meeting the criteria discussed in the Participants section to determine matrix inclusion. Interviews, lasting at least one hour, may be in-person or via video conferencing depending on the expert's location. Before the interviews, participants will receive comprehensive information about the study's objectives, procedures, and potential implications. Written consent will be obtained to ensure voluntary participation and confidentiality.

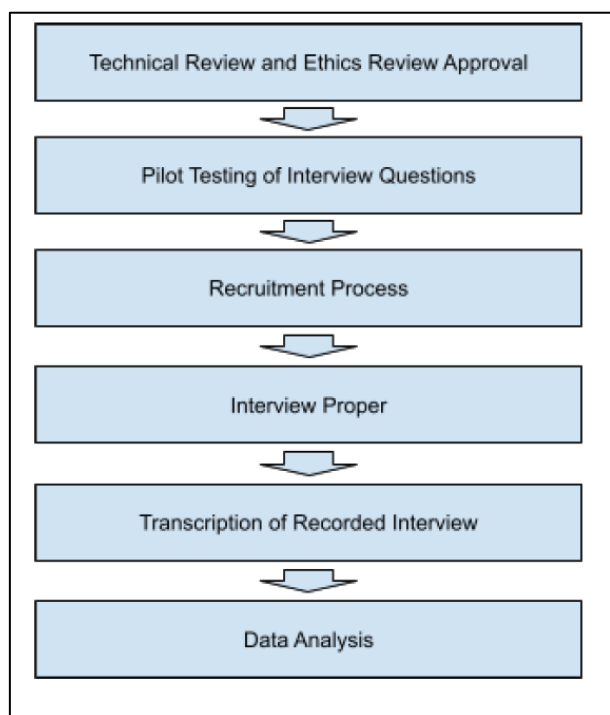


Figure 1. Data Gathering Procedure

The interview panel will include two researchers, a research adviser, and the key informant, following a semi-structured interview guide. The same interviewers will be conducting the interviews of all key informants. The research team, trained in Good Research Practice, will record and moderate the session, with guidance from either of the two professional advisers. Interviews will continue until data saturation is reached, measured by the lack of new significant information. If data saturation is not reached, further probing will be done to extract new information from the key informants. No repeat interviews were conducted.

Post-interview, three team members will transcribe the recordings verbatim, with the remaining four members cross-checking for completeness. Recordings and transcriptions will be shared with the experts for validation. In addition to these, field notes will be utilized to capture nuanced insights, including non-verbal cues, environmental factors, and researcher reflections, enriching the depth of analysis.

Data Analysis. After transcription, the research team will conduct a thematic analysis, a qualitative research method used to systematically organize and analyze complex

data sets.¹⁷ The analysis will be performed using NVivo 14.23.0 software to ensure a systematic exploration of patterns, trends, and relationships within the data, enhancing the rigor and reliability of the research findings. A study highlighted NVivo's value in organizing and analyzing vast amounts of qualitative data, improving research efficiency.¹⁸

The research team will use identified codes from the software to create a coding tree following the codes-to-theory model.¹⁹ The coding tree will help organize codes, categorize them, and identify themes. All researchers will countercheck the identified codes, categories, and themes. A comparison and contrast discussion will be held within the team, and any disagreements will be resolved through consultation with the professionals on the research team. Once themes are established, the researchers will interpret and analyze the data using thematic analysis.²⁰

Reflexivity will be employed to ensure transparency regarding the authors' rationale and personal biases throughout the study, minimizing potential bias.²¹ After analyzing the themes, the researchers will develop the scoring matrix content, and key informants will be provided with a copy of the completed study.

Scientific Rigor. Scientific rigor will be ensured using four strategies: credibility, transferability, dependability, and confirmability. Credibility will be addressed by ensuring accurate transcription of the data derived from key informant interviews. All team members will undergo similar training in conducting interviews to maintain consistency. During data collection, interviewers will use a semi-structured format, allowing flexibility to probe further based on participant responses, while ensuring consistency across interviews. Additionally, peer reviews of the transcripts will be conducted to provide scrutiny, identify significant observations, and mitigate potential biases. Transferability will be achieved by presenting processes and methods in detail to allow for the application of findings in different contexts or settings. Detailed descriptions of the research design, including participation selection criteria, interview protocols, and data analysis

procedures, will be provided. During data collection, quota sampling will be used to ensure a rich, varied sample of key informants, allowing for the exploration of diverse perspectives. These efforts will contribute to the contextual richness of the findings, making them more applicable to similar situations or populations. Reflexivity will be ensured by transparently incorporating participants' words in the final report. For dependability, the team will ensure meticulous documentation of the steps taken during the different research phases, detailing participant selection, data gathering, analysis, and interpretation, and an audit trail will be maintained that discusses and describes the entire research process. Confirmability will be ensured through the immediate documentation of personal feelings, biases, and insights following the key informant interviews. This practice will help to ensure that findings are grounded in the data rather than shaped by researchers' preconceptions. The research team will also document decisions about coding, theme development, and the reasoning behind interpretations to ensure that conclusions are traceable and well-supported by data.

EXPECTED RESULTS

In this study, the researchers expect to obtain information on the subjective experiences and perspectives of Filipino rehabilitation professionals and patients in regard to on-site rehabilitation and telerehabilitation for low back pain.

Key themes, such as factors influencing recommendations, including insights into how efficacy, patient preferences, accessibility, and implementation barriers affect decisions between telerehabilitation and on-site care. Also, lived experiences of the participants, which would provide us a detailed understanding of the patient's and healthcare professional's personal involvement, highlighting their perceptions of both rehabilitation modes.

With this, the study could contribute to improving the quality of the local healthcare system, and prompt further research into exploring telerehabilitation versus onsite

rehabilitation in different conditions and in varying populations.

Individual Author's Contributions

All authors contributed equally.

Disclosure Statement

This study is not affiliated with any funding agency.

Conflicts of interest

The authors of this paper declare no conflict of interest.

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