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# Occupational Safety and Health Practices among Physical Therapists in Metro Manila during the COVID-19 Pandemic: A Qualitative Study Protocol

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## Abstract

**Introduction.** The purpose of Occupational Safety and Health (OSH) is to protect and prevent workers from being exposed to risks and hazards that are detrimental to their health and safety. For the past two years, the coronavirus disease 2019 (COVID-19) is one of the most significant occupational health outcomes to physical therapists (PTs) due to the nature of their work. However, minimal studies have been conducted about the experiences and OSH practices of PTs during the pandemic. This study aims to understand the experiences of clinical PTs in Metro Manila, Philippines during the pandemic. The study also seeks to explore the OSH practices and responses of PTs to presenting occupational risks and hazards through a qualitative descriptive study design.

**Methods.** In this qualitative descriptive study, a maximum variation purposeful sampling method will be used in recruiting an estimated total of twelve (12) participants. A preliminary questionnaire would be disseminated via Google Forms to determine the eligibility of potential participants. Data will be gathered through a one-to-one semi-structured online interview, which will be transcribed verbatim and recorded with audio and video. Both manual coding and software-aided coding (NVivo) will be utilized in the data analysis. Emerging themes will be identified using thematic inductive analysis.

**Discussion.** The results of the study may contribute to the formulation of better guidelines in handling infectious diseases even after quarantine restrictions are lifted. Furthermore, the findings will also provide the groundwork for the local body of knowledge in the Philippines and may serve as a future reference for research concerning OSH practices in physical therapy locally.

**Keywords:** Occupational safety and health, Physical therapy, COVID-19 pandemic, Metro Manila



## Introduction

Occupational Safety and Health (OSH) is the development and continuity of a worker's highest degree of physical, mental, and social well-being regardless of occupation. Furthermore, it aims to protect and prevent workers from being exposed to risks and hazards detrimental to their health and safety (International Labour Organization, 2014). These hazards can be further classified as health and safety hazards (Department of Labor and Employment [DOLE], 2016). Health hazards include chemical, physical, biological, and ergonomic hazards. Safety hazards involve two main hazards: unsafe acts and unsafe conditions. Regardless of the classification of hazards, these affect the overall health and well-being of all workers.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the biological hazard (or agent) that causes COVID-19, has significantly increased in transmission over the past two years (World Health Organization, 2021). The number of affected people has been continuously increasing since its first case in December 2019. On March 11, 2020, COVID-19 was officially declared by the World Health Organization (WHO) as a pandemic (Palacios-Ceña et al., 2021). The general population worldwide has been dramatically affected by the rapidly evolving situation in multiple aspects such as economically, mentally, and financially (Xiong et al., 2020). In the Philippines, despite having one of the world's longest lockdowns, COVID-19 cases continue to rise (Biana & Joaquin, 2020). As of December 1, 2021, the total nationwide cases is 2,833,038, with 15,327 active cases. 3,519 (22.96%) of which are cases in Metro Manila (Department of Health, 2021). In line with this, a county-level analysis investigating the relationship between population density and COVID-19 incidence (Martins-Filho, 2021) further emphasized that population has been found as a potential indicator of infection spread. Given that Metro Manila is considered to be the most densely populated area in the country, with it having a population density of 21,765 persons per square kilometer (Mapa, 2021), this province became the location of interest for the study.

During this time, different Alert Level Lockdown Regulations were also implemented in the country by the Inter-Agency Task Force to better systematize the handling of COVID-19 depending on the situation of the city, municipality, and/or region being resided in (Inter-Agency Task Force for the Management of Emerging Infectious Diseases, 2022). These alert level lockdowns had corresponding sets of policies needed to be followed by healthcare institutions with regards to OSH practices based on the restrictions posed by the different alert levels.

In an article discussing the occupational risks for COVID-19 infection (Koh, 2020), it was mentioned that occupational factor is the highest indicator of exposure to the aforementioned virus, with healthcare workers (HCWs) being one of the more exposed occupations. In a study conducted among six (6) Asian countries,

HCWs garnered the highest percentage of cases with a 22% infection rate, followed by non-healthcare occupations such as those involved in transportation (18%), services and sales (18%), cleaning and domestic work (9%), and public safety (7%) (Paz et al., 2021). As of December 1, 2021, 28,388 HCWs have already been diagnosed with COVID-19 in the Philippines alone, as reported by the Department of Health (DOH). Various studies also note that HCWs are more vulnerable, particularly to acquiring mental health conditions, including fear, anxiety, depression, and insomnia (Jácome et al., 2021; Aly et al., 2021; Pappa et al., 2020). Physical therapists (PTs) are also one of the vulnerable professionals among HCWs due to the need for physical contact in patient care and their critical role in the early mobilization and recovery of COVID-19 patients. Physical therapy rehabilitation techniques such as muscle strengthening, stretching, balance training, respiratory exercises, secretion clearance techniques, and low-intensity aerobic exercises are recommended to address the symptoms of the COVID-19 patient (Paz et al., 2021). A survey in Italy (Gianola et al., 2021) explores the various exposure of PTs in the said country during the first wave. 15,566 PTs participated, and 13.1% of them reported positive of COVID-19 with the primary reason of working in a healthcare institution. In the Philippines, however, no local data has been established.

The increase of transmission in the workplace and the fear of getting infected affect the level of fatigue, stress, anxiety, and fears of PTs. As such, there have been noticeable changes in OSH Practices in the workplace setting done to prevent the further spreading of this virus. OSH Practices are the policies, strategies, processes, and actions implemented or followed by the management of an organization targeting safety of their personnel (Vinodkumar & Bhasi, 2010). Several studies including a rapid review, clinical practice guidelines, and a cross-sectional study, indicate that these changes include the decreased number of patients, the discontinuation of within-hospital outpatient services, the addition of screening protocols for patients before attendance, the conversion of rehabilitation areas into acute medical units for COVID-19 patients, the adjustment of work hours, giving of extra shifts to staff who work part-time, the redeploying of PTs to different units such as the ICU and COVID-19 wards, the incorporation of infection prevention and control measures in PT assessments and interventions, and increase in telerehabilitation or digital health services and expenditures for video conference software (Wittmeier et al., 2020; Vyas & Sheth, 2021). In addition to these changes, there was a rise in the cost of infection control as sanitization, protective equipment, and the time spent by PTs working in personal protection equipment (PPE) kits increased, having to change these several times a day (Vyas & Sheth, 2021). Different healthcare prevention policies to reduce risks for infection have been implemented, such as minimal contact therapy, frequent sanitization of equipment, wearing disposable PPEs, compulsory sanitization before entering clinics, regulation of body temperature, productivity optimization and modification of shifts for HCWs, and decreasing the number of patient-therapist interactions in the same physical space to

facilitate social distancing among people in the clinic (Vyas & Sheth, 2021; Alpalhão & Alpalhão, 2020; Aderonmu, 2020). These studies have explored the changes; however, these are only some of a handful of studies exploring the experiences, specifically, of PTs. As such, a thorough assessment of existing literature revealed three main points corresponding to the results: (1) Limited studies are found to have PTs as participants. Most studies conducted research on doctors and nurses whose professions present with different occupational risks and hazards; (2) There is limited research concerned with the other aspects of OSH in the field of physical therapy, namely physical, chemical, and biological hazards, as most of the studies focus on the psychological issues such as burnout, stress, and anxiety; and (3) To date, no similar studies have yet been done in the Philippines; the studies found were done in different countries. This study, therefore, aims to understand the experiences of clinical PTs in Metro Manila, Philippines, during the COVID-19 pandemic. Moreover, the study will explore the OSH practices of these PTs and their response to presenting occupational risks and hazards during the pandemic.

The use of behavioral theories in health care settings has been encouraged as this helps with creating programs and practices that may reduce or prevent injuries and illnesses related to OSH. The health belief model (HBM), a behavioral change theory, has often been used to guide public health research and practice to improve an individual's health (Guerin & Sleet, 2020). For example, a study investigating the adherence to standard precaution from the standpoint of the HBM (Martins et al., 2015) was able to explain the acceptance of HCWs on recommendations of OSH practices that prevent working accidents. The HBM posits that health-related behavior depends on six factors or dimensions: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action (Jones et al., 2015). These dimensions can be used as a guide to explain and predict the individual's behavior towards adherence to OSH practices as precautionary measures against COVID-19 (Tong et al., 2020).

The results of the study may contribute to the formulation of better guidelines in terms of handling infectious diseases even after quarantine restrictions are lifted. Safety guidelines undergo different processes before being implemented, including an evidence retrieval stage which is a summary of all relevant research. The results of the study will aid in knowing what specific precautions, trends, and practices need to be continued, discontinued, or added to minimize the spread of the disease (World Health Organization, 2014). Furthermore, the findings will also provide the groundwork for the local body of knowledge in the Philippines since no published articles have documented the COVID-19 experiences of Filipino clinical PTs, especially in Metro Manila. It may serve as a future reference for research concerning OSH practices in physical therapy locally, as available studies are done abroad and may not be applicable due to the difference in pandemic response by the national healthcare system in the Philippines.

## Methods

### *Ethical Considerations*

This study will be implemented in accordance with the Declaration of Helsinki and Good Clinical Practice Guidelines of the Philippine Health Research Ethics Board (PHREB). Approval will be provided by the research institution's Ethical Review Committee once the study is deemed ethical and appropriate for implementation. The data gathered will only be utilized in achieving the objectives of the study with consideration for the protection of the participants.

A personal information sheet (PIS) and informed consent form (ICF) will be distributed through email to willing participants during the recruitment process. It will include the request to participate, information on their right to terminate involvement at any time, and their right to refuse participation. The risks and benefits of participation will be enumerated alongside privacy and confidentiality. Consent will be obtained through an E-signature on the ICF form and verbal consent prior to the start of data collection.

All plans for data collection, utilization, keeping, and disposal will be made known to the participants. All data gathered in the recruitment and collection process containing the personal information of the participants will be stored in a password-protected document and placed in a folder on Google Drive ([www.drive.google.com](http://www.drive.google.com)). The drive can be accessed only by the Google accounts of three (3) assigned members of the research team. Upon completion of data collection, files stored in Google workspace will be transferred to one (1) assigned researcher's flash drive and deleted from the cloud space. Codes will also be assigned to each participant to ensure anonymity in all research files and documents, including removing identifying information from the transcripts. The data of the participants will solely be used for the intended purpose of the study and will be kept for a maximum amount of 5 years. After which, it will be disposed of by deleting and destroying files, hard drives, and media which contain the individual participant's personal information on all devices used in the research. For the participants' access, the overall results of the study will be provided to them via email upon its completion.

In addition to these, due to the threat of the pandemic, data will be conducted through online interviews via the platforms Zoom Meetings ([www.zoom.us](http://www.zoom.us)) and Google Meet ([meet.google.com](http://meet.google.com)). Zoom Meetings provides added security by establishing communications using Transport Layer Security (TLS) to ensure privacy and confidentiality. Furthermore, meeting, webinar, and messaging content will be encrypted with optional end-to-end encryption using the 256-bit Advanced Encryption Standard (AES). Zoom has also designed several policies and controls to safeguard the collection, use, and disclosure of information as a commitment to protecting an individual's privacy (Zoom, n.d.).

Google Meet, on the other hand, allows all data to be encrypted in transit by default between the client and Google for video meetings. It does not store video, audio, or chat data unless a meeting participant initiates a recording during the Meet session, wherein data will be stored in Google Drive. Customer data is not used for advertising purposes and is not being sold to third parties. Google Meet adheres to Internet Engineering Task Force (IETF) security standards for Datagram Transport Layer Security (DTLS) and Secure Real-time Transport Protocol (SRTP). It regularly undergoes independent verification of its security, privacy, and compliance controls, achieving certifications, attestations of compliance, or audit reports against global standards (Google Meet Help, n.d.).

### Research Design

The study will utilize a qualitative descriptive design to describe clinical PTs' experiences and OSH practices within Metro Manila, Philippines, during the COVID-19 pandemic. This study design draws from a naturalistic inquiry that aims to study a problem in its natural state within the context of the research topic. Thus, there is no manipulation of variables and non-prior commitment to any theoretical view of a target phenomenon (Lambert & Lambert, 2012). The qualitative descriptive design is commonly used in healthcare-related research, which focuses on answering the who, what, and where of experiences, events, or processes from an informant's perspective (Doyle et al., 2020). Furthermore, this study design is used when data is gathered to help develop and improve healthcare situations, such as practices or interventions (Kim et al., 2017; Sullivan-Bolyai et al., 2005).

### Research Participants

The study will utilize a maximum variation purposeful sampling method to recruit participants, a common sampling technique used in qualitative research (Palacios-Ceña et al., 2021). The method sought maximum variation through the various settings of full-time PTs working in clinics. This ensures that the selected participants are not just knowledgeable and experienced with the interest of the study but can also provide a wide range of perspectives from various conditions brought about by having different specializations (Rai & Thapa, 2015). Additionally, this technique is consistent with the objectives of the study as it aims to recruit participants from the same region of Metro Manila.

A total of twelve (12) participants will be recruited as the initial sample size for the study. According to a study, the recommended size for sufficient data saturation for qualitative designs requires a minimum sample size of twelve (12) participants (Vasileiou et al., 2018). The participants will consist of general and specialized PTs but with no set number assigned for each specialization. Number of participants may increase until data saturation is achieved as based on the principle of inductive thematic saturation (Saunders et al., 2018).

Initial recruitment of participants will be done by promoting the study through various social media platforms. Interested

participants will be screened according to the inclusion and exclusion criteria summarized in Table 1. A minimum clinical practice of three (3) years is required for the adequate experience of OSH practices before and during the pandemic (Park et al., 2015). The inclusion criteria are based on the objectives of the study as it aims to understand the experiences of PTs in terms of OSH practices and response to occupational risks and hazards in Metro Manila during the pandemic.

The specializations of the PTs recruited, as the dimension for variation, will be based on the Special Interest Groups (SIGs) recognized by the Philippine Physical Therapy Association (PPTA), which are orthopedic/manual therapy, geriatrics, pediatrics, sports physiotherapy, neurology, and others. Educators were excluded as they are part of the exclusion criteria. Other specializations, such as cardiology and pulmonology, were chosen based on the number of patients in these departments, affecting approximately 300,000 people each year (World Health Organization, 2018).

However, PTs who are not affiliated with an institution are excluded as their OSH protocols are not supervised by the Department of Labor and Employment (DOLE) as stated in the general provisions of Department Order 198 (Vyas & Sheth, 2021; DOLE, 2018). Additionally, included in the exclusion criteria are PTs who are only working through telerehabilitation as they lack in-clinic experiences and may not provide sufficient information needed for the objectives of the study.

**Table 1. Inclusion and exclusion criteria for the selection of participants.**

Inclusion	Exclusion
1. Holding a physical therapy license from the Professional Regulation Commission (PRC)	1. PTs working full time in the academic field
2. Has a minimum clinical practice of three (3) years in clinics and/or hospitals	2. Unemployed PTs
3. Must be currently affiliated with a clinical institution in NCR	3. Physical therapy advocates
4. Must be currently working during the pandemic	4. PTs who are only working through telerehabilitation
	5. Home clinicians that are not working in any institution

### Setting

The study will be conducted online with an estimated duration of 5 months, from July to November 2022. Interviews with the participants will be conducted via the online platforms Zoom Meetings ([www.zoom.us](http://www.zoom.us)) and Google Meet ([meet.google.com](http://meet.google.com)) in order to prevent exposure from COVID-19.



## ***Research Instrument***

A preliminary questionnaire will be disseminated via Google Forms (forms.google.com) to potential participants to determine their eligibility. The questionnaire includes asking for personal information, work experience, internet accessibility, contact information, and consent.

In-depth semi-structured interviews will be utilized as a tool for gathering and collecting data by the researchers as it can be altered depending on the conversation, making it possible to emphasize some questions and include new ones (Guerrero-Castañeda et al., 2017). A set of questions prepared beforehand will be used as a guide as this type of interview allows the participants to explore issues flexibly (Clifford et al., 2016). In addition, probes will be provided to ensure that the researcher covers the correct information (Harrell & Bradley, 2009).

The questions asked will be a series of open-ended questions to provide more detailed information to derive various concepts and categories. The HBM was used as a guiding framework in the formulation of the questions to fully understand the participants' experiences as it identifies the important constructs (Champion & Skinner, 2008). Additionally, bracketing was utilized to set aside preconceived notions on the topic to prevent researcher bias in the participants' responses (Creswell & Poth, 2013). Questions will be validated by two experts in the field of OSH. A discrepancy in information pointed out and other suggestions will be incorporated in the revision of the questions as necessary.

## ***Data Gathering Procedure***

The approval of the Ethics Review Committee of the [institution omitted for anonymity] will be obtained before commencing the data gathering procedure.

The initial sample size of 12 participants is then purposefully picked according to the inclusion and exclusion criteria and sent with invitations attached with informed consent to participate in the study. Data will be collected using one-to-one semi-structured in-depth interviews to ensure a comprehensive and uninfluenced data collection.

The finalized interview guide will then be used to gain a comprehensive and adequate understanding of the phenomenon. The guide will be structured around the classification of OSH hazards and OSH practices being undertaken (DOLE, 2016). The interviews will be conducted by three (3) researchers: two undergraduate researchers, currently taking BS Physical Therapy, will be responsible for taking notes and recording the interview, and one senior PT researcher with a Master of Occupational Health degree and experience as a Safety Officer for probing in the interview considering the topic of interest is OSH, will be delivering the interview questions and conversing with the participants (DOLE, 2018). Other than these three researchers and the participant, no other person will be present in the video call to ensure the participant's privacy and to prevent inadvertently

affecting their responses. All are educated with research reflexivity and have gone through adequate interview training on the topic. The interviews will be conducted while keeping in mind a conscious effort to listen to the participant and avoid conversation and leading questions that could inadvertently influence the direction of the responses. Prior to the interview, a dialogue type of bracketing and reflexivity will be utilized.

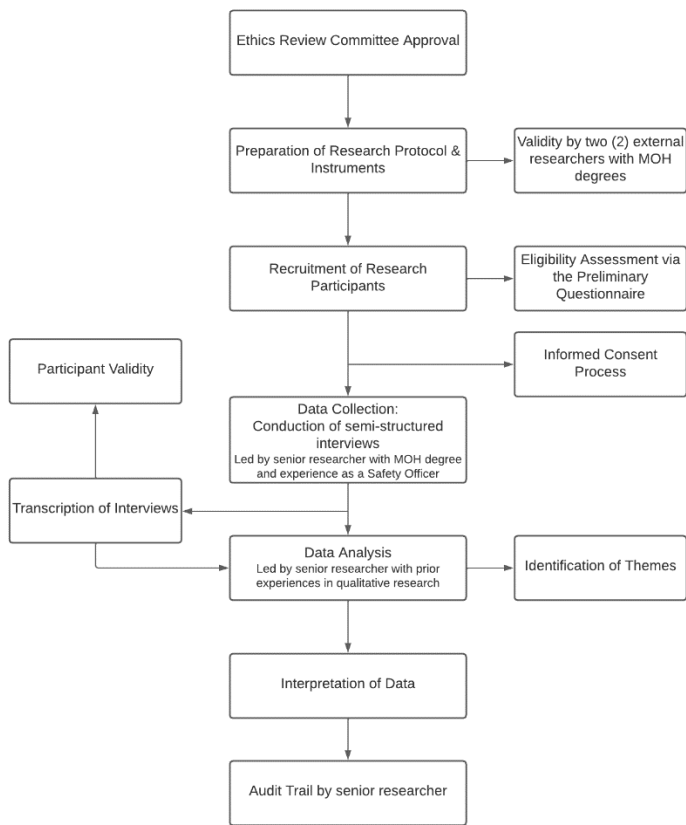
The participants will then be briefed on the study and assured of the confidentiality of personal information that could inadvertently affect their responses. The information and responses of the participants will only be accessible to the researchers and will be coded in the data analysis procedures and the final presentation of the study. Interviews will be conducted for approximately 30 to 90 minutes through video calls using the online platforms Zoom Meetings and Google Meet. Breaks or intermissions will be provided throughout the duration of the interview to allow rest periods in cases of mental stress. The participants may opt to terminate their involvement in the study at any time without consequences. The interview's audio and video will be recorded via the built-in recording software of these platforms, provided that the participant has given their consent. The interview will be guided with the self-made semi-structured question guide and verified by two external researchers with Master's Degrees on Occupational Health.

A conscious effort will be made by the interviewer to determine the timeline of the participants' responses on their experiences with regards to the exact month/s or year/s these were applicable to. This is to identify possible influences that the Alert Level Lockdown Regulations may have on the experiences of the participants.

The field notes during the interview will also be recorded together with the non-verbal expressions of the participants, which include pauses in-between conversations, the pace of speech, and the expression of emotions. Transcriptions will be written manually with the aid of the transcription software NVivo (www.qsrinternational.com). Transcriptions of the interviews will be sent back to the participants for review of presented data for reconfirmation of unclear meanings. The revised transcription of data will then be reviewed by each researcher in order to formulate individual notes, followed by the peer review in a debriefing meeting to avoid bias during the data analysis portion of the study.

## ***Data Analysis***

A thematic inductive qualitative analysis will be utilized as the study will be dealing with qualitative data that requires the identification of specific patterns (Sundler et al., 2019). This method primarily aims to describe and understand the complexity of the data gathered (Kiger & Varpio, 2020).



**Figure 1. Data Gathering Procedure**

Three (3) among the eleven (11) researchers will be conducting the data analysis. Two (2) of which are junior undergraduate researchers guided by a senior researcher with previous experience in qualitative research. The transcripts of interviews and field notes will be read and re-read in-depth by the analysts independently to provide theme extraction. Bracketing and reflexivity will be utilized prior to data analysis.

Aside from manual coding, a software (NVivo) will assist in creating and organizing the codes determined in the transcripts. Underlying themes and similarities between the data will be determined and clustered as codes (Creswell & Poth, 2013). Emergent categories will be utilized in the coding process to reflect the participants' views (Crabtree & Miller, 1992). Consideration for both concrete expressions and emergent themes of described healthcare experiences allow for more robust qualitative research findings (Kim et al., 2017; Kiger & Varpio, 2020). Once all interviews have been analyzed for themes, the analysts will meet to agree on the definitions and theme extraction to establish trustworthiness.

To ensure the dependability of the study, a senior researcher with previous experience in qualitative research will be performing an audit trail containing information related to the data collection and data analysis processes, including interview recordings, interview transcripts, analysis notes, process notes, categorical

considerations, themes, ideas, and relationships between categories.

Table 2 shows the analysis and trustworthiness criteria used in the study. The criteria were informed by a qualitative exploratory study on the experiences of PTs and future challenges for physical therapy in Spain during and after the COVID-19 pandemic (Palacios-Ceña et al., 2021).

**Table 2. Analysis and trustworthiness criteria.**

#### Thematic analysis

- **Step 1:** Identifying the most descriptive content (codes).
- **Step 2:** Subsequently identify the categories (code groups). Categories will include emergent topics that describe the participants' experiences.
- **Step 3:** Subsequently, joint meetings will be held to combine the results of the analysis. Theme identification will be based on consensus among the researchers.

The thematic analysis process will be separately done upon the semi-structured interviews. The NVivo software will be used to assist in analyzing the data.

#### Trustworthiness method

- Credibility using cross-triangulation by the researchers, triangulation of methods of data collection, participant validation.
- Transferability using in-depth descriptions of the study performed.
- Dependability using audit by a senior researcher.
- Confirmability using researcher reflexivity.

*Note.* Step 2 of the thematic analysis was adapted from the Department of Labor and Employment (2016). The trustworthiness method was adapted from the study of Palacios-Ceña et al. (2021).

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### ***Conflict of interest statement***

All authors declare that there is no conflict of interest in the study. Additionally, the study will be completely self-funded.

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