Factors affecting health-related quality of life among physical therapy students in the Philippines during the COVID-19 pandemic: a cross-sectional study

Marlou Del N. Tarranco

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FACTORS AFFECTING HEALTH-RELATED QUALITY OF LIFE AMONG PHYSICAL THERAPY STUDENTS IN THE PHILIPPINES DURING THE COVID-19 PANDEMIC: A CROSS-SECTIONAL STUDY

A Thesis Presented to the Graduate Studies in Medical and Health Sciences De La Salle Health and Medical Sciences Institute City of Dasmariñas, Cavite

In Partial Fulfilment of the Requirements for the Degree Master in Public Health

MARLOU DEL N. TARRANCO, PTRP

MAY 2022
APPROVAL SHEET

This master's thesis hereto entitled:

“Factors Affecting Health-Related Quality of Life Among Physical Therapy Students in the Philippines During the COVID-19 Pandemic: a Cross-Sectional Study”

Prepared and submitted by Marlou Del N. Tarranco in partial fulfillment of the requirement for the degree Master in Public Health, has been examined and is recommended for acceptance and approval.

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MDNT
ABSTRACT

Introduction: The COVID-19 pandemic affected a wide array of sectors including the academe. The transition to remote learning poses additional challenges as college students are considered particularly vulnerable with the COVID-19 pandemic having a significant negative impact on them. This study seeks to further elucidate the impact of the COVID-19 pandemic on the Health-Related Quality of Life on one of the presumably vulnerable populations – the Physical Therapy Students.

Methods: This quantitative, cross-sectional study is guided by the Ferrans and Colleagues' Health Related Quality of Life (HRQOL) model. A 45-item Research Instrument was made from adapting the questions and variables stated in related literatures and modifying them to match the objectives of this study. For the data analysis, Ordinal Logistic Regression, Wald-Chi Square test, and Likelihood ratio Chi-Square test were used.

Results: The data was gathered from the 77 participants aged 19-24 among 2nd year to 4th year PT students from DLSMHSI. The statistical models showed that the overall HRQoL can be affected by place of residence (p<.005), health perception (p <.026), supervision in academic outputs (p<.047), age (p<.027), mood (p<.033), adequacy of technological devices (p<.028), year level (p<.015), family structure (<.033), activity level (p<.038), sex (p<.006), intrusion experienced while having class (p<.034), and exposure to COVID (p<.005).

Conclusion: The findings of this study suggest that majority of the respondents have greater perceived impact of the pandemic on their quality of life. The significant predictors to the overall HRQoL include presence of COVID-19 infection, age, sex, family structure, place of residence, year level, adequacy of technological devices, adequate supervision in academic outputs, intrusions experienced while having class, activity level, health perception, and mood.

Keywords: HRQOL, quality of life, students, COVID-19
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CHAPTER 1

THE PROBLEM AND ITS BACKGROUND

Introduction

The newly discovered coronavirus Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was first noted by the World Health Organization (WHO) on December 31, 2019, in Wuhan, People's Republic of China (WHO, 2020) and has now spread throughout the world with 194,608,040 confirmed cases as of July 27, 2021. (WHO, 2021). The novel virus had its name changed from 2019-Novel Coronavirus (2019-NCoV) to COVID-19 on February 11, 2020 (WHO, 2021). Data from WHO (2021) suggest that there are those who never developed symptoms yet are able to transmit the virus to others. Infected people tend to be most infectious just before they develop symptoms so that, being in crowded places, close-contact settings, and confined areas with poor ventilation must be avoided. While the WHO recommended strategies and measures continue to work against the virus and its concomitant variants (WHO, 2021), the world continues to struggle against the virus and the Philippines is no exception.

In the Philippines, the Department of Health (DOH) reported a 38-year-old female as the first case of COVID-19 in the country on January 30, 2020, then on March 7, 2020, the first local transmission was confirmed (WHO – Philippines, 2021). A code red was declared by the DOH on March 7, 2020, wherein a recommendation to the Office of the President for the declaration of a State of Public Health Emergency has been raised (Philippine DOH, 2020). On March 9, 2020, President Rodrigo Duterte signed Proclamation 922 which placed the entire country under a state of public health emergency due to the outbreak of COVID-19 (Philippine News Agency, 2020). Approximately during these times, some Local Government Units (LGUs) like in Cavite were able to anticipate the severity of the situation and imposed an early suspension of classes (Remulla, 2020) while on March 16, 2020, President Rodrigo Duterte signed the Proclamation 929 where it declares a state of calamity throughout the Philippines due to the COVID-
19, and an enhanced community quarantine was imposed for the whole Luzon for almost a whole month (Philippine News Agency, 2020). It took a while before things stabilized and this unfolding of events was new to most of the Filipinos, thereby, probably placing uncalled distress on their health. Since then, the Philippines has been one of the countries that were severely impacted by the prolonged and widespread transmission of the virus (Rabacal et al., 2020), with a nationwide case of over a million since April 26, 2021, and a total of 1,562,420 as of July 28, 2021 (Philippine DOH, 2021).

The COVID-19 outbreak, while it has affected the world’s educational system, opened up a multitude of opportunities for the country to upgrade its educational mode of delivery and to utilize emerging technologies (Toquero, 2020). It has been a call for the Higher Education Institutions (HEIs) in the country and around the world to respond proactively to the disruption caused by the pandemic and one of the methods that were utilized was online learning through digital platforms (Moralista & Oducado, 2020). From this viewpoint, the pandemic has caused students together with the faculty and staff, to experience psychological distress brought about by the sudden change in their everyday living (Guillasper et al., 2021). Times during a pandemic are difficult wherein everyone could experience difficult situations such as healthcare problems, physical and mental exhaustion, and academic burnout due to COVID-19 (Guillasper et al., 2021). Aside from physical health, the psychological impact of COVID-19 could also be a significant threat to mental health and well-being given that higher levels of anxiety and stress could be further emphasized by the ongoing uncertainty of the situation (Rabacal et al., 2020).

Amidst the COVID-19 pandemic, while the quality of life of teachers, as well as nursing students in the Philippines, were studied already (Guillasper et al., 2021; Rabacal et al., 2020), to the best of the researcher’s knowledge, there has been no study yet on the rehabilitation sector of the allied health particularly on the Physical Therapy students regarding their health-related quality of life during this pandemic. Lee (2020) stated that the COVID-19 pandemic has forced the
physical therapy profession to resort to digital physical therapy practice and telehealth. However, it has been emphasized by Plummer et al. (2021) that Physical Therapy (PT) is a profession that mostly uses hands-on techniques and requires an ample amount of face-to-face setting for a learner to develop patient assessment and treatment skills, thus, the transition to remote learning poses additional challenges to allied health professions including the PT students. Moreover, college students, in general, are considered particularly vulnerable to mental health concerns with the COVID-19 pandemic having a significant negative impact on different aspects of academic, health, and lifestyle-related outcomes (Son et al., 2020).

Akranavičiūtė & Ruževičius (2007) mentioned in their paper the eight domains of quality of life in which the Health-Related Quality of Life is a part of, among the others namely Material aspects of Quality of Life, Quality of Spiritual and Psychological Life, Quality of Working Life, Quality of Life in the Family, Quality of Social Life, Quality of Leisure, and Environment Related Quality of Life. Quality of Life and some of its subcomponents including the Health-Related Quality of Life and mental health in the context of the COVID-19 pandemic have been studied together in multiple studies outside the Philippines. The results generally suggest that the pandemic have a negative impact on the quality of life towards various population (Al Dhaheri et al., 2021; Al-Shannaq et al., 2021; Alyami et al., 2021; Buselli et al., 2020; Carenzo et al., 2021; de Matos et al., 2020; Khan et al., 2021; Kim et al., 2020; Levkovich et al., 2021; Lipskaya-Velikovzky, 2021; Liu et al., 2020; Mahmoudi et al., 2021; Manh Than et al., 2020; McGuine et al., 2020; Mirzaei et al., 2021; Ozdemir et al., 2020; Park et al., 2021; Raman et al., 2021; Suryavanshi et al., 2020; Tran et al., 2020; Vafaei et al., 2020; Xie et al., 2021). Amidst this pandemic, focusing on the study of the Health-Related aspect of the Quality of Life is important, on the assumption that people of all ages and statuses can be affected by the virus either directly or indirectly. Thus, this study seeks to focus on and further elucidate the impact of the COVID-
19 pandemic on the Health-Related Quality of Life (HRQoL) on one of the presumably vulnerable populations – the Physical Therapy Students.

**Theoretical Framework**

This study utilized the Health-related Quality of Life model from Ferrans et al. (2005) which was a revision of the Wilson & Cleary model (1995). Historically, Wilson & Cleary (1995) developed this model since there has been limited research that explicitly conceptualizes the relationships of clinical variables of HRQoL nor identified the intervening variables that can mediate those effects. Wilson & Cleary (1995) believed that the lack of conceptual models that interconnects different patient outcome measures hampers the progress of the therapeutic approach in improving patient function. Two different paradigms of health were integrated into this model namely the clinical paradigm, which deals with the biomedical aspect, and the social science paradigm, which focuses on the dimensions of functioning and overall well-being (Wilson & Cleary, 1995).

Bakas et al. (2012) reviewed the most widely used HRQoL models and made a critique about them. They found out that the three most commonly used HRQoL models from the hundred articles that fit their inclusion criteria were Wilson and Cleary model, Ferrans and colleagues’ model, and the World Health Organization International Classification of Functioning Disability and Health (WHO ICF) (Bakas et al., 2012). Bakas et al. (2012) recommended the use of Ferrans and colleagues’ HRQoL model which they deemed to have the greatest potential to guide the researchers and practitioners on their future HRQoL studies. Ferrans et al. (2005) revised the original model from Wilson & Cleary (1995) in three ways: (1) added an arrow from both the characteristics of the individual and environment to biological function to indicate that it is influenced by the two, (2) removed the non-medical factors which were previously connected directly to the overall quality of life, and (3) removed the labels on the arrows from the original model since they argued that it restricts the characterization of the relationships. A critical analysis made by Bakas et al. (2012) on these three models
encompasses the following: Wilson and Cleary model includes five well-defined domains - biological symptoms, function, general health perception, and overall HRQoL but the definition for the characteristics of individual and environment were not made explicit and consequently, each domain connects to the other so a reciprocal relationship can exist. Ferrans and colleagues’ model, on their revision of the Wilson and Cleary model, retained most of the original domains, provided further theoretical background on the main concepts of the model, provided examples of instruments to enhance measurement, and lastly, it emphasized that the revised version could be applied to any health care discipline. WHO ICF model, unlike the other mentioned models, is not specific to HRQoL and serves more of a mapping and classification framework rather than as a guide for hypothesis generation. In short, the Ferrans and colleagues’ model provided a more complete and clear depiction of the HRQoL compared to the Wilson and Cleary model, while the WHO ICF model has limited use on HRQoL studies and may be more applicable for needs assessments, matching treatments with conditions, and evaluating outcomes (Bakas et al., 2012).

In their concluding statement, Bakas et al. (2012) argued that using only one model may help in the comparison of HRQoL across studies and population which subsequently can contribute to a quicker advancement in the science of HRQoL. Using Ferrans and colleagues’ HRQoL model (Ferrans et al., 2005) could guide the researcher in determining the factors that could affect the HRQoL among the chosen population in the context of the COVID-19 pandemic. The framework guided the researcher in identifying the variables needed for constructing the questionnaire. The developed research tool asked either a direct or indirect question to gather data on the assumptions made by the model. The topics under the literature review also revolved around the various factors affecting the overall quality of life, together with the other observed variables in this model such as the individual and environmental characteristics.
In Figure 1, the arrows in this model depict the relationships among each identified variable as follows:

a. Biological Function – encompasses anatomical and physiological function at the molecular, cellular, and organ level. Affectation at this level could directly or indirectly affect the succeeding components of health.

b. Characteristics of the Environment - can be categorized as either social or physical. Social environment pertains to social influences on health outcomes such as the influence of family, friends, healthcare providers. Physical environment pertains to settings in home, neighborhood, and workplace that affect the health outcomes. Interpersonal factors are also included such as formal and informal social support systems; institutional factors such as schools and healthcare; community factors such as relationships among institutions and informal networks, as well as public policies such as laws and policies at either local and national level are all included under this variable as identified by McLeroy and colleagues' five levels of influence (Ferrans et al., 2005).

c. Characteristics of the Individual - can be categorized as demographic, developmental, psychological, and biological factors that can influence health outcomes. Intrapersonal factors were included under this variable.
according to McLeroy and colleagues’ five levels of influence (Ferrans et al., 2005)

d. Functional Status - focuses on the ability of a person to perform physically, socially, psychologically as well as their role-specific function.

e. General Health Perception - refers to the subjective synthesis of all the various aspects of health and the integration of the earlier variables of the model.

f. Symptoms - deal with the patient’s perception of abnormalities in one’s physical, emotional, or even cognitive state.

Statement of the Problem

With the educational sector in the Philippines slowly adapting and recovering from being disturbed by the pandemic, still, little has been researched about the Quality of Life of the students in the Philippine setting during this COVID-19 pandemic. While international studies were able to conclude that the COVID-19 generally affects the psychosocial aspect of the students' Quality of Life (Alsoufi et al., 2020; Chawla et al., 2020; Grande et al., 2021; Khan et al., 2021; Son et al., 2020; Tiaprapong et al., 2021), cultural differences may hinder the generalizability of these studies (Alsoufi et al., 2020; Grande et al; 2021; Khan et al., 2021; Villanueva et al., 2021). As a result, this may have an unknown impact on the Filipino students' quality of life as well as performance in academics. While most studies during this pandemic focused on the effectiveness of Physical Therapy intervention in improving the quality of life of various cases (da Silva, et al., 2020; Karpukhina et al., 2020; Mayer et al., 2021), little is currently known on the quality of life of Physical Therapists during this pandemic, particularly the students.

Purpose Statement

The purpose of this study is to investigate the Health-related Quality of Life among the Physical Therapy students enrolled in De La Salle Medical and Health
Sciences Institute in the Philippines. The guiding framework mainly revolves around the Ferrans and colleagues' HRQoL model (Ferrans et al., 2005) which implies that the overall quality of life can be affected by a multitude of factors starting from the biological function, symptoms, functional status, general health perception, as well as the unique characteristics of an individual and the characteristics of the environment wherein one belongs to. The dependent variable includes the overall quality of life, specifically, the HRQoL, while the independent variables include the characteristics of the individual and environment. The symptoms, functional status, and general health perception serve also as the independent variable but could also be regarded as confounding and a mediator variable at some point. The arrows in the framework generally guide the researcher in determining which variable affects which. This guided the researcher in analyzing and interpreting the results of this study.

Research Objectives

General Objective:

This study aims to determine the factors that affect the Health-Related Quality of Life (HRQoL) among Physical Therapy (PT) Students in the De La Salle Medical and Health Sciences Institute (DLSMHSI) in the Philippines and determine if these factors significantly affect the students' HRQoL

Specific Objectives:

1. To assess the overall HRQoL of PT students in DLSMHSI
2. To identify the factors that would affect the students' HRQoL as to:
   a. individual characteristics
   b. environmental characteristics
   c. other factors such as symptoms, functional status, and general health perception
3. To determine if said factors significantly affect the HRQoL
Hypothesis

Null hypothesis (H₀): The independent variables such as characteristics of the environment and individual, symptoms, functional status, and general health perception have no significant effect on the Health-Related Quality of Life (dependent variable) among PT students.

Alternative hypothesis (H₁): The independent variables such as characteristics of the environment and individual, symptoms, functional status, and general health perception have a significant effect on the Health-Related Quality of Life (dependent variable) among PT students.

Scope, Delimitation, and Limitation

This study focused on identifying and understanding the factors that could affect the Health-Related Quality of Life among the students enrolled in the Bachelor of Science in Physical Therapy in the De La Salle Medical and Health Sciences Institute, located in Dasmariñas City, Cavite, Philippines, from March 1 to 31 during the Academic Year 2021-2022. This study included 2nd year to 4th year students as respondents. The 2nd year students and 3rd year students mainly have PT professional subjects while the 4th year students undergo internships in various clinics and hospitals mostly through telerehab. Given the pandemic, the online method of learning has been adopted by the college with a very conditional face-to-face approach since this is highly determined by the central and local government.

The 1st year students were excluded from the study since their curriculum is not focused yet on Physical Therapy units. Only the factors that were identified in the devised questionnaire are measured and included in this study. The majority of questions asked in the survey tool have been adapted from literature which should answer the objectives laid out by the researcher. Also, with regards to the guiding framework for this research, the Ferrans and colleagues' HRQoL model, the biological function would not be included in the questionnaire given that it
delves on cellular to organ system levels which cannot be studied through the proposed research design.

Part of the limitation of the study is the limited time for implementation which garnered lesser sample size compared to the ideal. The implementation of the study only stretched out only for a whole month and this might not be enough given the occupied schedule of the students which may have hampered their timely response to the questionnaire. Nonetheless, weekly prompt and notification to answer the survey form was done to ensure participation to the study.

Significance of the Study

The researcher believes that the results obtained from this study may benefit the following:

**PT Students.** The results of this study could help the students be aware of the factors that affect their HRQoL. This information could possibly be used by the students for improving their HRQoL amidst the COVID-19 pandemic.

**Faculty Members.** This study may provide the DLSMHSI - College of Rehabilitation Sciences (CRS) Faculty Members the information on HRQoL of the students that they handle, which could be a point of discussion during counseling activities.

**School Administrators.** This study may provide information that could help the school administrators in decision-making and policy-making regarding the students’ academic experience.

**Future researchers.** This study may help future researchers in further bridging the gap about the quality of life studies here in the Philippines in the context of the COVID-19 pandemic.
Definition of Terms

The following terms were used in the study:

**Characteristics of the Environment.** This will be represented in the study as those factors that are external to the individual. This includes the PT student’s physical environment, interpersonal factors, and workload as a student.

**Characteristics of the Individual.** This will be represented in the study as those factors that are innate to the individual. This includes the student’s demographical data and psychological aspect such as personality and mood.

**Functional Status.** This reflects the PT student’s capacity to perform tasks.

**General Health Perception.** This reflects the current outlook of the PT student towards his/her own health.

**Health-Related Quality of Life (HRQoL).** Refers to the effects of health and other health-related issues on the quality of life of a person. It can be affected by a one of the following factors such as the individual and environmental characteristics of a person, together with biological factors, symptoms, functional status, and general health perception.

**Overall Health-Related Quality of Life.** This pertains to all the factors that affects the HRQoL which includes the characteristics of the individual and environment, biological function, symptoms, functional status, and general health perception.

**Quality of Life.** An umbrella term in which a wide array of concepts such as well-being, life satisfaction, happiness, and the HRQoL belong to. In this study, it has been used interchangeably with HRQoL.

**Symptoms.** This reflects the PT student’s own perception on any abnormalities regarding their own health.
CHAPTER 2
REVIEW OF RELATED LITERATURE

This chapter presents background knowledge about the topics that are covered in this study. This includes topics taken from books, journals, and articles, news reports, and electronic sources.

Quality of Life, in general, is certainly an important aspect to research as it has been a concern of policymakers, researchers, and healthcare practitioners (Bakas et al., 2012). In the context of COVID-19 and to date, only the study of Guillasper et al. (2021) and Rabacal et al. (2020) investigated the Quality of Life particularly on the mental health and physical health among the Filipinos using a specific population which includes nursing students and teachers, respectively. Thus, this study aims to further give clarity about the Health-Related Quality of Life among a particularly affected population during the COVID-19 pandemic. The succeeding sections will discuss further the relevant findings from previous studies on the topic and give emphasis on the need for this research. This literature review covers the following topics: (a) COVID-19, (b) Quality of life, (c) Philosophical Foundations of Quality of Life, (d) Factors Affecting Quality of Life, (e) Health-Related Quality of Life, (f) Factors affecting Health-Related Quality of Life, (g) Measures of Health-Related Quality of Life, and (h) Allied Health Students and Education.

COVID-19

On December 31, 2019, the World Health Organization first learned about the new coronavirus, SARS-CoV-2, in Wuhan, China, where a cluster of cases of viral pneumonia has been reported (WHO, 2020). People 60 years and older and with comorbidities were reported to have a higher risk of getting severely infected, while anyone, regardless of age, can become seriously ill, or even die from COVID-19 (WHO, 2020). As summarized by WHO (2020), the most common symptoms include fever, dry cough, fatigue while the list of less common symptoms includes loss of taste or smell, nasal congestion, conjunctivitis, sore
throat, headache, muscle pain, skin rash, nausea and vomiting, diarrhea, and chills or dizziness.

The Philippines had its first case on January 30, 2020, and on March 7, 2020, local transmission was first documented and confirmed (WHO – Philippines, 2021). At present, the situation in the country is still uncertain, given that the COVID-19 is still going rampant despite the ongoing distribution and administration of vaccines. The Philippine government strives to achieve herd immunity against the virus by November 2021 in the NCR+8 areas which were treated as COVID-19 hotspots including the National Capital Region (NCR), Cavite, Bulacan, Laguna, Rizal, Pampanga, Batangas, Metro Cebu, and Metro Davao (Manuel, 2021). While this is a good over-all objective, this initiative by the government may seem to be a race against time given that there have been four variants of concern identified worldwide. The new variants were identified by experts to have an increase in transmissibility, change in clinical disease presentation, and consequently, a decrease in the effectiveness of public health and social measures or available diagnostics together with vaccines and medications (WHO, 2021). On a positive note, WHO emphasized that the current strategies and measures recommended earlier by the organization continue to work against the currently identified variants. This would mean that the fight may be far from over but through scientific breakthroughs and continued public health measures, the country may finally contain the virus sooner or later.

Quality of Life

The Center for Disease Control and Prevention (CDC) defined QoL as a broad spectrum, multidimensional concept that includes subjective evaluation of either the positive and negative aspects of life (CDC, 2018). WHO, on the other hand, defined QoL as the individual's perception of their position in life, considering one’s culture and value system, concerning their goals, expectations, and standards (WHO, 2012). Another definition of QoL is the degree to which a
person’s life meets various standards of a satisfactory life (Michalos, 2014). These are just a few among the vast scholarly definitions of QoL.

The concepts QoL and HRQoL have no common definition, therefore, the terms can be quite unstructured but their flexibility and usage in the evaluation of public health policy are where these two concepts usually serve their purpose (Bowling, 2005). The topic on QoL has been touched on innumerable research already including various contexts and in many countries, to the point that Michalos (2014) managed to amass a good amount of QoL studies and made an encyclopedia about it. Sirgy (2012), on the other hand, stated that the amount of research about the QoL over the last decade has been expansive and, in his book, extensively discussed the psychological aspects of QoL as well as its philosophical roots. It was emphasized by Sirgy (2012) that philosophers agree that the subjective concepts of QoL or happiness can be obtained using three concepts mainly: Psychological happiness, Prudential happiness, as well as Perfectionist happiness. The related concepts and variables surrounding these ideas will be further discussed in the succeeding sections.

Philosophical Foundations of Quality of Life

The concept of QoL alone is vague and has a lot of interrelated concepts and ideas. Philosophical foundations of QoL such as happiness, affect, well-being, eudaimonia, mental health, and life satisfaction (Sirgy, 2012) will be touched to give a better foundation on the topic.

As mentioned in the paper of Burlacu (2018), the terms happiness and quality of life share the same similarities and are closely related. Happiness and its related concepts, according to Sheldon & Lucas (2014) could serve as an indicator of how well an individual’s life is, which conversely relates that as an individual’s life improves, so should their happiness too. Sirgy (2012) implied that the consensus of most philosophers is that “happiness is a universal drive that very much guides the human behavior.” Happiness can be both a philosophical concept and a psychological concept (Sirgy, 2012) and the three philosophical
views of happiness according to *Haybron (2000)* include psychological happiness, prudential happiness, and perfectionist happiness. Psychological Happiness, otherwise known as Hedonic or Emotional Well-being, is the experience of positive emotions over time or the psychological sense of happiness, which is an important component of Prudential Happiness. Meanwhile, Prudential Happiness, also known as Life Satisfaction or the Cognitive Component of Subjective Well-being, refers to a state of well-being and involves the feelings of happiness and consequently, the action that pushes for personal growth. Lastly, Perfectionist Happiness, *Eudaimonia* or Psychological Well-being, refers to a life that is holistically good in every aspect (*Haybron, 2000, as cited in Sirgy, 2012*).

Meanwhile, affect, as summarized by *Sirgy (2012)*, could be divided into two types: positive and negative, which many studies on QoL use to capture a person’s subjective well-being. Previous studies lead to pointing out that the negative affect component of well-being is strongly associated with neuroticism and that positive affect component has a similar association with extraversion (*CDC, 2018*).

The concept of well-being, according to *CDC (2018)*, is a “multi-faceted term that has no single definition but generally includes the presence of positive emotion and moods together with the absence of negative emotions, as well as life satisfaction and fulfillment.” On a related note, mental health, as defined by, *WHO (2018)*, is an “integral component of health which can be determined by a variety of factors such as socioeconomic, biological, and environmental.” Comparably, life satisfaction can be viewed as a “cognitive conceptualization of the subjective well-being and happiness of a person” (*Sirgy, 2012*). These are the concepts that are generally connected with the QoL and HRQoL. Reviewed literature usually indicates either one of these terms or a combination of them to connect with the QoL or HRQoL of a person.
Factors Affecting Quality of Life

In the book of Sirgy (2012), a diverse list of factors that could affect the QoL of a person was presented. He divided the concepts into Objective, Subjective, Life Domains, and Population Segments. For the purpose of outlining and ease of understanding, the researcher will adapt the outline presented in the book of Sirgy (2012) particularly focusing on the Objective and Subjective Factors as well as relevant Population Segments for this study.

Objective Factors

Economic

Recent happenings pertaining to the COVID-19 pandemic could very well affect everyone, including the Filipinos. It has been noted by Wu et al. (2021) that economic losses are inevitable given that there has been an economic recession at a global scale and those who have been affected by COVID-19 and have been hospitalized faced more economic challenges than healthy individuals. Similarly, El Keshky et al. (2020) emphasized the current impact of COVID-19, not only on the local economy but on a global scale which also affects the sustainability and the quality of life of the people. Likewise, Sirgy (2012) emphasized that there is evidence suggesting a correlation between an economic boom, increased life satisfaction, subjective well-being, and mental health. Perceived ranking of income could predict life satisfaction than the actual income rankings, meaning, those people who believe that they are in the middle or richest of the national income distribution report significantly higher levels of life satisfaction than those who perceive their income as low (Sirgy, 2012).

Political

According to studies, in general, people are most likely to have a high level of subjective well-being if the country they belong to has low levels of corruption and high levels of law and order (Sirgy, 2012). Based
on survey results last April 6 to 8, 2020 on the Philippine government response to COVID-19, it was shown that around 80 percent of the Filipinos perceived that that government is handling the COVID-19 pandemic “well” (*Gita-Carlos, 2020*). On a critical analysis paper by *Hapal (2021)*, it was argued that the Philippine response to COVID-19 is one of the longest and strictest lockdowns in the world as the government “securitized” COVID-19 by framing the pandemic as a war against the Philippine’s survival. *Crismundo (2021)* reported that the Philippines belong to one of the four countries as reported by the International Budget Partnership with an “adequate” level of accountability during its early response to the COVID-19 pandemic.

While each person may have their own opinions and comments on the Philippine government, this research would like to only emphasize that the government’s responses and action amidst the pandemic may affect each individual’s quality of life, especially on the lower economic class wherein they are mostly reliant on the government for their finances and needs.

*Sociocultural*

The viewpoint of *Sirgy (2012)* on sociocultural effects on QoL is that social quality and cultural values play a vital role in subjective aspects of QoL. The meaning of happiness tends to differ across cultures, and in order for individuals to experience self-realization and fulfillment, several social aspects should be fulfilled such as socioeconomic security, social inclusion as well as social empowerment (*Sirgy, 2012*). On a similar note, the study by *Jaspal & Lopes (2021)* suggested that amidst the COVID-19 pandemic, some minority groups may have poorer mental health outcomes due to stress and discrimination. Meanwhile, a study by *Baceviciene & Jankauskiene (2021)* concluded that the COVID-19 pandemic has a unique impact on the sociocultural attitudes of students in terms of their appearance, health-related lifestyle, and quality of life.
Wealth

Studies suggest that there has been a strong relationship between a person’s income and their subjective well-being, but between this relationship, moderators such as personality, cultural, economic, and political factors can be at play (Sirgy, 2012). Wealthy individuals have quick and easy access to improve well-being by buying resources or affording services to enhance happiness (Sirgy, 2012). The study of Yang & Ma (2021) found out that having a higher income or owning multiple properties before and after the pandemic is associated with a higher level of emotional well-being and also argued that the highest income groups may have better emotional well-being after the pandemic compared to before. Meanwhile, the study of Ken-Dror et al. (2020) showed that despite being in the upper social class, the rates of complication and deaths due to COVID-19 is almost the same as the rest of the population and concluded that COVID-19 might have a universal reach which affects anyone regardless of their socioeconomic background.

Demographic Factors

Previous studies by Andrews & Withey (1976), Diener (1984), and Argyle (1999) found out that around 10-15% of the variance in life satisfaction can be attributed to demographic characteristics (as cited in Sirgy, 2012). Age, Gender, Marital Status, and Family Composition, Education, Work-related Demographics, Community-related Demographics, Ethnicity and Minority Status, and Religious Affiliation are among the other factors that could be listed under demographics.

In the context of COVID-19 in the Philippines, Tee et al. (2020) found out that 12-21 years old were more affected psychologically. In the international setting, researchers usually utilize the youth-young adults (Lipskaya-Velikovsky et al., 2021; Liu et al., 2020; Suryavanshi et al., 2020; Temperoni et al., 2021; Yee et al., 2021; L. Zhang et al., 2021) or the elderly (Esain et al., 2021; Harrison et al., 2021; Herrera et al., 2021;
Levkovich et al., 2021; Sayin Kasar & Karaman, 2021; Walle-Hansen et al., 2021) for HRQoL during COVID-19 studies which, generally, show a result of negative impact on the studied population.

With respect to gender, moderators such as age and country where one lives in serve as a moderator (Sirgy, 2012). As to age, the literature suggests that women start their adult lives happier compared to men but subsequently end their lives less happy than their male counterparts; while as to the country, research shows that happiness of either male or female may vary and differ across different nations (Sirgy, 2012). Current literature on the COVID-19 pandemic suggest that females were more affected compared to males (Amerio et al., 2022; Arab-Zozani et al., 2020; Azizi et al., 2020; Buselli et al., 2020; Chen et al., 2020; Guillasper et al., 2021; Huang et al., 2020; Lipskaya-Velikovsky, 2021; Lizana et al., 2021; McGuine et al., 2020; Rezapour et al., 2022; Tee et al., 2020; Wunsch et al., 2021).

Married women and pregnancy-related studies were also taken into account during this pandemic. Daneshfar et al. (2021) noted that among other factors, marital satisfaction serves as an influencing factor on QoL among married women. Meanwhile, family problems such as parental divorce were found out to be associated with a cascade of negative happenings such as low subjective well-being, behavioral problems, and lesser education which subsequently leads to a lower job position and ultimately a lower standard of living (Sirgy, 2012).

There has been an argument that education can be a double-edged sword which, on the positive note, could serve as a medium in achieving one’s dream, but, on the negative note, could also raise one’s aspiration which conversely impacts life satisfaction of a person (Sirgy, 2012). Amidst the pandemic in the Philippines, there have been studies on various challenges in the field of education (Cuaton, 2020; Joaquin et al., 2020; Moralista & Oducado, 2020; Rotas & Cahapay, 2020; Toquero, 2020) and
in a similar study by Guillasper et al., (2021) and Rabacal et al., (2020) the QoL of students and teachers, respectively, has been studied and showed to be decreased.

Work-related demographics suggest that the type of job and its classification, hours rendered, as well as the distance from home to job location also has an impact on QoL while community-related demographics suggest that living in an urban location and less populated areas contribute to a higher level of well-being (Sirgy, 2012). With the ongoing pandemic, there is evidence that healthcare professionals are more exposed to workplace violence (Xie et al., 2021), and positive coping strategies such as active coping, help-seeking behaviors were noted to have a positive impact on the quality of working life of a person, which prompts administrations and management to be proactive in supporting their staff with a better coping skill through psycho-education (McFadden et al., 2021).

**Activities**

Physical activities such as social activities, physical exercise, volunteering tasks, and religious activities, based on literature, are found to have a positive effect on the QoL of a person (Sirgy, 2012). During the pandemic, Esain et al. (2021) found out that physical activity helps in maintaining high levels of HRQoL among older adults while participants in the study of Wu et al. (2021) showed their intention to keep themselves healthy through exercise. Meanwhile, the study by Harrison et al. (2021) indicates that physical activity has declined since the onset of the COVID-19 pandemic despite the important benefits of staying active for the physical and mental health of a person.

On another note, Respirehab, which consists of therapeutic exercises for the lungs, together with aerobic, conditioning, and strengthening exercises were implemented by Daswani & Bhatia (2021) on COVID-19 patients and showed improvement in terms of clinical and
functional outcomes. This shows the importance of staying active in terms of preventing and recovering from the novel coronavirus.

Genetics, Health, Biological Factors, Physical Environment and Drugs

According to Sirgy (2012), as to genetics, there is enough evidence that suggests that it plays an important role in happiness. For example, some will have the predisposition for a positive mood while others will have the negative counterpart. Similarly, healthy people are bound to have high levels of subjective well-being. Physical exercise, sleep-wake patterns, environmental temperature, and levels of pollution could also affect the well-being of a person. Lastly, substance abuse may have a temporary boost in the mood but may need higher doses in the future to create the same effects.

Subjective Factors

Personality Traits

Sirgy (2012) implied that several personality traits such as neuroticism, extraversion, affective disposition, self-esteem, mindfulness, and character strengths could affect subjective well-being. Shokrkon & Nicoladis (2021) stated that both neuroticism and extraversion have the strongest relation to mental health in pre-pandemic times. Neuroticism, as defined in the paper of Lahey (2009), refers to tendencies to respond with negative emotions to threat, frustration, or loss while extraversion as defined by Saklofske et al. (2012) as a personality dimension which comprises being sociable, lively, dominant, and adventure-seeking.

In the context of the COVID-19 pandemic, it has been found out by Shokrkon & Nicoladis (2021) that extraversion positively affected mental health while the opposite has been found for neuroticism. The opposite has been found out by Rettew et al. (2021) which, persons with higher levels of extraversion, have a deceased mood as the pandemic progressed compared to those with lower levels of extraversion wherein a slight
increase in mood was seen over time. Self-esteem on the other hand was positively correlated with happiness and is one of the strongest predictors of subjective well-being (Sirgy, 2012). Meanwhile, affective disposition is associated with traits and emotions such as love, gratitude, and hope which are associated with happiness (Sirgy, 2012). Lastly, people who practice mindfulness towards their surroundings and circumstances are also likely to report higher levels of subjective well-being (Sirgy, 2012).

As Rettew et al. (2021) suggest, personality traits are related to the mental health of a person and have a role in the coping mechanism when faced with a major stressful event. Also, there could be traits that are more adaptive to a certain type of stressor (Rettew et al., 2021).

Effects of Affect and Cognition

It has been laid out by Sirgy (2012) that there is evidence that shows that Mood, Causal Attribution, Appraisals, Personal Meaning, Habituation, and Cognitive Frames have an important role in the subjective well-being of a person. For instance, a happy mood is directly related to happy thoughts and happy thoughts impact the thinking of a person positively (Sirgy, 2012). Considering the pandemic, there are also studies on QoL which assess the interplay between QoL and mood, together with a wide variety of factors such as sleep patterns, diet, personal relationship, and physical activity (Amatori et al., 2020; Puccinelli et al., 2021; Sinha et al., 2020). Subjective well-being is also being influenced by attributing matters towards internal factors, which can yield a higher level of happiness, in contrast when connected to external factors which could only yield a lower level of happiness, and vice versa with unfortunate events (Sirgy, 2012). In a study by Y. Lee et al. (2021), it was found out that causal attributes were significantly related to the quality of life. Raman et al. (2021), on the other hand, implied that there might be a potential link between COVID-19 infection and future risk for cognitive decline. The literature shows that QoL could be affected by various factors pertaining to affect, mood, and
cognition while COVID-19 could have a potential direct or indirect effect on these factors which could also lead to influence QoL in the process.

*Effect of Beliefs and Values*

Religious beliefs and personal values also play a role in a person’s well-being (*Sirgy, 2012*). It was further determined that a wide array of beliefs and values such as having a positive mindset, high level of social trust, experience, as well as forgiveness, and gratitude could affect the quality of life of a person. In a study by *Perez et al. (2021)* on spirituality, life satisfaction, and gratitude among Filipinos, they concluded that gratitude positively affects the spirituality of a person which, sequentially, positively affects life satisfaction. Among the Jordanian adults, it was pointed out by *Al-Shannaq et al. (2021)* that the most commonly reported coping skills were religion, acceptance, and planning. On a similar note, religion played an important role in the Somalian’s beliefs in protection and salvation from the COVID-19 (*Braam et al., 2021*). *Jakovljevic & Jakovljevic (2021)* argued that spiritually integrated sciences, arts, and religion can significantly contribute to promoting a holistic society and emphatic civilization, which could help alleviate the impact of the current pandemic on everyone.

**Population Segments**

*QoL of College Students*

It has been found out by *Michalos and Orlando (2006)* that a college student’s subjective well-being is determined by satisfaction on personal domains such as family relation, and university-related domains such as contentment with the instructors (*as cited in Sirgy, 2012*). In the context of COVID-19, data gathered by *Al Dhaheri et al. (2021)* and *Son et al. (2020)* showed that college students’ QoL and mental health have been affected negatively by the pandemic. *Panayiotou et al. (2021)*, in their study of QoL among college students during the COVID-19 pandemic, claimed that the
significant predictors of a decline in QoL compared to the pre-pandemic baseline were difficulty expressing feelings together with the difficulty in accessing strategies related to emotion regulation, thus, implying the importance of emotional clarity and availability of strategies for coping up with the pandemic.

**QoL of Women**

Evidences show that the COVID-19 pandemic made an impact particularly on the female population (Alaya et al., 2021; Azizi et al., 2020; Buselli et al. 2020; Coronado et al., 2021; Daneshtaf et al., 2021; Guillasper et al., 2021; Huang et al., 2020; Lipskaya-Velikovsky, 2021; Lizana et al., 2021; McGuine et al., 2020; Mirzaei et al., 2021; Naghizadeh et al., 2021; Salehi et al., 2020; Tee et al., 2020; Wunsch et al., 2021). While most of the studies in the context of COVID-19 particularly discuss pregnancy and pregnancy-related issues on females (Alaya et al., 2021; Daneshtaf et al., 2021; Mirzaei et al., 2021; Salehi et al., 2020; Naghizadeh et al., 2021), the general population (Azizi et al., 2020; Lipskaya-Velikovsky, 2021), teachers (Lizana et al., 2021), healthcare workers (Buselli et al. 2020; Huang et al., 2020;) and students (Guillasper et al., 2021; McGuine et al., 2020) as well as children (Wunsch et al., 2021) were all studied within this pandemic and generally, a consensus is that women were affected negatively in their QoL more than their male counterparts. Sirgy (2012) pointed out that women, compared to men, are likely to experience more intense positive and negative affect even though literature suggests that there is no significant difference as to life satisfaction between the two. It was further specified that women experience more stress, anxiety, and depression (Sirgy, 2012), which may be connected to the greater affectation of women compared to men in times of this pandemic.
QoL of Countries

In a Social Weather Stations (SWS) Survey on Filipinos QoL that was conducted last December 30, 2020, it was found out that 44% of the Filipinos said that their QoL will improve, 36% said there will be no changes, and 9% were saying that it will worsen, which resulted to a Net Personal Optimism score of +35 which was defined by SWS as very high (SWS, 2020). This was a good recovery since on a separate survey held last November 2020, it was found out that 62% of adult Filipinos got worse off in the past 12 months (SWS, 2020) and could be proof of resilience among the Filipinos. Resilience, as Guillasper et al. (2021) found out, has an inverse relationship with the impact of COVID-19 on QoL, meaning, it is a variable that can affect the QoL of a person positively, compared to the COVID-19 which affects the QoL negatively. Camitan & Bajin (2021) emphasizes that while there are people who are more likely to experience mental health issues, there are also those who were more resilient and were able to move on quickly with their lives. In a study by Tee et al. (2020) on the Psychological Impact of COVID-19 among the general population of Filipinos, it was found out that women, age 12-21 years old, being single, students, having COVID-19 related symptoms (i.e., headache, cough, chills), being quarantined and prolonged stay at home, self-reported health status was poor, unnecessary worry on COVID-19, concern about family member health status, and feeling of being discriminated by other nations were all correlated with a greater psychological impact and higher levels of stress, anxiety, and depression. The factors listed by Tee et al. (2020) together with the resiliency among the Filipinos as highlighted in the study of Camitan & Bajin (2021) and Guillasper et al. (2021) are what adds up or negates the QoL of the Filipinos among with the various factors to consider during this pandemic.
**QoL of Immigrants**

The book of Sirgy (2012) discusses how being an immigrant could lead to either a satisfied or unsatisfied life. The answer to this as Sirgy (2012) stated is complex and a lot of factors should be considered such as income, place of migration, psychological factors, and social factors to name a few. As to the best of the researcher’s knowledge, there are scarce data on the QoL of immigrants to the Philippines, not to mention on the student population and in the context of COVID-19.

**QoL of Teachers**

Since the pandemic affected the Philippine educational system to its core and exposed the weakness in its current system (Cuaton, 2020; Toquero, 2020), not only the students but also the teachers are affected as well (Moralista & Oducado, 2020; Rabacal et al., 2020). Mandatory closure of schools led the educational system, together with the teachers and learners to shift into an online setting (Cuaton, 2020) which is particularly new for both of the concerned parties. In a longitudinal study in Chile by Lizana et al. (2021), it was found out that before the COVID-19 pandemic, a low QoL score among teachers was already observed which magnified further during the pandemic particularly to women and those under 45 years old. Another study by Plummer et al. (2021) in Brazil which used Physical Therapy (PT) Faculty as their population found out that PT Faculty members describe their experience in teaching as one of the most challenging experiences of their professional careers. In the Philippines, both Moralista & Oducado (2020) and Rabacal et al. (2020) agreed that the teachers’ QoL were affected negatively by the pandemic. Although the challenge lies mostly on those with authority to review and enhance the current educational system (Toquero, 2020), the teachers serve as the backbone of the educational system and they continually need to adapt to the new normal (Cuaton, 2020; Moralista & Oducado, 2020; Rabacal et al.,
in order to deliver the learnings to their students while not compromising its quality.

Health-Related Quality of Life

Health-Related Quality of Life (HRQoL) has been defined by Bowling (2005) as one dimension and a part of a bigger picture, which is the Quality of Life. Meanwhile, the Centers for Disease Control and Prevention (CDC) defined HRQoL as an individual’s or a group’s perceived physical and mental health over time (CDC, 2021). The concept of HRQoL itself and its determinants have evolved since the 1980s to widen the scope and encompass the overall quality of life, including the physical and mental health aspects (CDC, 2018). In a short span of time, there has been a lot of studies which focused on HRQoL in the context of COVID-19. Across different population groups such as children (Adibelli & Sümen, 2020; Nobari et al., 2021; Ueda et al., 2021; Wunsch et al., 2021), adolescents (R. Lee et al., 2020; McGuine et al., 2020; Nobari et al., 2021; Riiser et al., 2020; Wunsch et al., 2021), students (Alsoufi et al., 2020; Chawla et al., 2020; Grande et al., 2021; Guillasper et al., 2021; Ramos et al., 2021; Son et al., 2020; Tee et al., 2020; Tiaprapong et al., 2021; Villanueva et al., 2021; Yasmin et al., 2020), adults (Al Dhaheri et al., 2021; Al-Shannaq et al., 2021; Alyami et al., 2021; Harrison et al., 2021; Liu et al., 2020; Park et al., 2021; Temperoni et al., 2021), pregnant women (Alaya et al., 2021; Dule et al., 2021; Mirzaei et al., 2021; Naghizadeh et al., 2021; Salehi et al., 2020), women or females in general (Huang et al., McGuine et al., 2020; Tee et al., 2020; Wunsch et al., 2021; Coronado et al., 2021; Daneshfar et al., 2021; Lizana et al., 2021), healthcare practitioners (Abdelghani et al., 2021; Buselli et al., 2020; Manh Than et al., 2020; Suryavanshi et al., 2020; Tran et al., 2020; Ungureanu et al., 2020, Vafaei et al., 2020), elderly (Esain et al., 2021; Herrera et al., 2021; Levkovich et al., 2021; Sardella et al., 2021; Sayin Kasar & Karaman, 2021; Walle-Hansen et al., 2021), and people with comorbidities (Arab-Zozani et al., 2020; Greco et al., 2021; Guo et al., 2021; Lim et al., 2020; Morales et al., 2021; Pulverenti et al., 2020; Younger et al., 2020).
the HRQoL was generally found to be decreased or has been affected during these times of pandemic. *CDC (2018)* emphasizes that focusing on HRQoL can interconnect disciplines of the social, mental, and medical services. Further, it is important to be measured since it can help in determining the burden and impact of the disease, injuries, or disabilities, and can also provide new insights on the relationship of HRQoL and risk factors associated with the disease (*CDC, 2018*).

**Factors Affecting Health-Related Quality of Life**

Based on the Ferrans and Colleagues’ HRQoL conceptual model, the HRQoL of an individual can be affected by a multitude of factors listed below.

**Characteristics of the Individual**

*Ferrans et al. (2005)* categorized the characteristics of the individual as “demographic, developmental, psychological, and biological factors that influence health outcomes.” In the Wilson and Cleary Model (*Wilson & Cleary, 1995*) that has become the basis of *Ferrans et al. (2005)* for their revised conceptual framework, it was noted that the former did not expound on the meaning of both the individual and environmental characteristics. Under demographic factors, sex, age, marital status, and ethnicity has been commonly associated with the incidence of illness, while biological factors such as body mass index (BMI), skin color, and family history of a genetic condition also presents an increased risk for disease (*Ferrans et al., 2005*). Developmental factors on the other hand, “cannot be changed or altered through intervention” while psychological factors are noted to be “dynamic, modifiable, and responsive to interventions” (*Ferrans et al., 2005*). There is also epidemiological evidence linking the individual characteristics and biological function through associating the attributes or behaviors of an individual that affects the likelihood of developing a disease (*Ferrans et al., 2005*). With this justification, an arrow has been connected to the biological function which the former model lacked.
Characteristics of the Environment

Ferrans et al. (2005) categorized the characteristics of the environment as either social or physical. The social environment was defined as “interpersonal or social influences on health outcomes, including the influence of family, friends, and healthcare providers.” Meanwhile, the physical environment was delineated as those “settings such as home, neighborhood, and workplace, which can affect the health outcomes either positively or negatively.”

Biological Function

According to Ferrans et al. (2005), biological function “encompass the molecular, cellular, and organ level processes.” Alterations in a person’s biological function could directly or indirectly affect the subsequent components of health such as symptoms, functional status, general health perception, and ultimately the overall quality of life (Ferrans et al., 2005). It was also emphasized by Ferrans et al. (2005) that optimizing the biological function is part of holistic care. Further, individual characteristics can affect the resilience and biological vulnerability of a person while exposure to pathogens in the community or a high crime rate can be attributed to physical and social factors found in the environment (Ferrans et al., 2005).

Symptoms

It was defined by Wilson & Cleary (1995) as a “patient’s perception of an abnormal physical, emotional, or cognitive state.” Ferrans et al. (2005) pointed out that the instruments to measure symptoms can be classified as global measures, condition-specific measures, and symptom-specific measures while it was mentioned that frequency, intensity, and distress are part of the dimensions of symptoms that are usually measured.
Functional Status

Wilson & Cleary (1995) specified four domains of functioning that are usually measured mainly: physical function, social function, role function, and psychological function. The term functional status is still a vast concept and Ferrans et al. (2005) pointed out that it can be viewed from various perspectives and frameworks. Leidy (1994) devised a framework that includes four dimensions namely functional capacity, functional performance, functional capacity utilization, and functional reserve (as cited in Ferrans et al., 2005). Previously, Bierman (2001) argued that functional status should certainly be a part of a holistic healthcare approach not only for the elderly but also for individuals of all ages. Before, medical record reveals almost nothing about the functionality of individuals (Bierman, 2001) but nowadays, functional status is such an important term and has been an important part of prognosis and assessments.

General Health Perceptions

Wilson & Cleary (1995) mentioned the two most defining characteristic of the general health perception which says that it integrates all the previously mentioned components as well as it is subjective in nature. Simply put, Ferrans et al (2005) defined it as a “synthesis of all the various aspects of health in an overall evaluation.” Further, based on studies, Ferrans et al (2005) pointed out that a strong and consistent predictor of the general health perception includes the physiological processes, symptoms, and functional ability. It is most commonly assessed by asking people to rate their health on a Likert scale, which can range from poor to excellent (Ferrans et al., 2005).

Measures of Health-Related Quality of Life

With a vast number of studies pertaining to the quality of life of a person or a population, measures of Health-Related Quality of Life have a
Measuring HRQoL has been considered important for measuring the impact of chronic diseases and because of responses of two individuals with the same clinical manifestation of symptoms may differ completely from each other (Guyatt et al., 1993). Guyatt et al. (1993) further stated that questionnaires can either be self-administered or interviewer-administered when measuring the cross-sectional or longitudinal changes in the quality of life of a patient, and two basic approaches in measuring QoL include either using a generic instrument which provides a summary of the HRQoL or specific instrument that tends to focus on problems associated with a particular disease, patient groups, or areas of function. In the book of Bowling (2005), the different, currently available measurements, were classified into Measurements of Functional Ability (e.g., Barthel Index, Karnofsky Performance Index, Index of Activities of Daily Living), Broader Health Status (e.g., Sickness Impact Profile, Short Form-36 Health Survey Questionnaire, McGill Pain Questionnaire, EuroQoL), Psychological Well-being (e.g., Hamilton Depression Rating Scale, Beck Depression Inventory, Goldberg’s General Health Questionnaire, Mental Status Questionnaire), Social Networks and Social Support (e.g., Social Network Scale, Family Relationship Index, Inventory of Socially Supportive Behaviors), Dimensions of Subjective Well-being (e.g., Life Satisfaction Index, Affect-Balance Scale, Satisfaction with Life Scale), Broader Quality of Life (e.g., WHOQOL, CASP-19, Quality of Life Questionnaire, Patient Generated Index). Guyatt et al. (1993) argued some points and criteria on what makes a good HRQoL instrument. According to him, instruments on QoL research can be divided into two, namely: Discriminative instrument – which differentiates people with better versus worse HRQoL, and Evaluative instrument – which measures how much the HRQoL has changed. Properties of the HRQoL instrument should be valid, interpretable, and has a high signal-to-noise ratio (Guyatt et al., 1993). In
the context of COVID-19, the resilience of nursing students, as well as their quality of life, has been assessed by Guillasper et al. (2021) using the Brief Resilience Scale and COVID-19 Impact on Quality of Life (COV19-QoL). Repišti et al. (2020) presented the COV19-QoL which consists of six items presented in form of a 5-point Likert scale that is supposed to measure the perceptions on the impact of the COVID-19 pandemic on QoL. Further, Repišti et al. (2020) concluded that COV19-QoL is a reliable and valid scale to assess the impact of COVID-19 on QoL. To keep it simple, the researcher would like to emphasize only the QoL measurement tools being used in the context of the COVID-19 pandemic.

Aside from capturing demographics and other related data, other examples of relevant measurement tools used by researchers of HRQoL amidst the COVID-19 pandemic to assess student’s HRQoL in general includes Quality of Life Evaluation Scale (QOLES) – a 22-item questionnaire with four domains tackling on physical health, psychological health, social relationships, and environmental health (Grande et al., 2021), Perceived Stress Scale-10 (PSS) – an instrument used to measure overall stress in the past month (Son et al., 2020; Tiaprapong et al., 2021), Patient Health Questionnaire (PHQ-2) – which is a 2-item questionnaire that assesses depressive symptoms of a person (Alsoufi et al., 2020), Dundee Ready Education Environment Measure (DREEM) – which assesses the learning environment (Villanueva et al., 2021), World Health Organization Quality of Life (WHOQOL-BREF) Questionnaire – which focuses on a broad aspect of quality of life (Chawla et al., 2020; Tiaprapong et al., 2021; Villanueva et al., 2021), International Physical Activity Questionnaire Short Form (IPAQ-SF), Mood Disorder Questionnaire (MDQ), 7-item anxiety scale (GAD-7), Patient Health Questionnaire (PHQ-9), Multidimensional Scale of Perceived Social Support (MSPSS) (Tiaprapong et al., 2021). The discussed measurement tools were all stated to be as reliable and valid according to the researchers that utilized...
these tools. Additional discussion on Measures of QoL can be seen under Chapter 3.

**Allied Health Students and Education**

By definition, allied health professionals are trained individuals who take part and are responsible for the delivery of health care or any related services (Lecca et al., 2003). It was further specified by the Association of Schools Advancing Health Professions (ASAHP) as health professions that are distinct from medicine and nursing (ASAHP, 2015). In the COVID-19 context, there have been studies that outline a negative impact on students who are in the field of medicine (Alsoufi et al., 2020; Chawla et al., 2020; Villanueva et al., 2021) and in nursing (Grande et al., 2021; Guillasper et al., 2021), while the study of Tiaprapong et al. (2021) found that half of the Thai health professional students have a moderate quality of life while some even have a poor quality of life. It has been stated by the WHO (2020) that closing the schools has a clear negative impact on multiple aspects such as health, education, development, family income as well as the overall economy. Students, in general, were also found out to be particularly affected by the pandemic (Al Dhaheri et al., 2021; Rotas & Cahapay, 2020; Son et al., 2020; Tee et al., 2020; Toquero, 2020; Yasmin et al., 2020). Meanwhile, faculty and teachers also are perceiving the negative impact of the pandemic in their lives (Kirk-Jenkins & Hughey, 2021; Moralista & Oducado, 2020; Rabacal et al., 2020).

As to education in the Philippines, several points to consider in these times of pandemic were laid out which includes the situation and context of the learner, efficiency of the learning environment, mode of delivery, internet speed, and overall cost (Joaquin et al., 2020) which could make a direct or an indirect impact on a student’s quality of life. It was mentioned in the paper of Cuaton (2020) that during this pandemic, the global education system is continually adapting to new challenges and situations which, instead of a conventional face-to-face classroom setting that involves direct human interaction, we are now capitalizing on virtual
and online education through the help of technology. Cuaton (2020) further argued that in the case of the Philippines, distance learning is not the ideal method for education given that the teachers of all levels were not technically, psychologically, or even educationally prepared to conduct online classes not to mention the poor and costly internet connection that serves as a great hindrance. The various factors mentioned could serve as a challenge for both the students and the teacher which this paper seeks to investigate the relationship of these variables to HRQoL. The Allied health profession particularly the HRQoL of Physical Therapy students in the Philippines has not been studied yet as of this writing. The factors mentioned above serves to emphasize the need for further studies regarding the topic and to justify the chosen population for this study.

Concluding Statement

The literature pertaining to QoL, in general, provides a wide array of information ranging from its definition, factors that impact QoL, measurement tools and strategies for QoL, as well as the various population that can be targeted for a QoL study. Strengths of the outlined literature include having an updated reference given that most literature used were recently published since the pandemic began. Philosophical background on the QoL and HRQoL and a list of factors that can affect it were also outlined and discussed thoroughly. However, despite the strengths of the currently available literature, the researcher believes that a study on allied health courses, particularly Physical Therapy students, should be conducted to widen the knowledge on the impact of the COVID-19 pandemic on various populations, since Physical Therapists are also considered as frontliners in this fight against the pandemic. Knowing the HRQoL of this certain population could very much add up to the scarce HRQoL data in the Philippines, especially amidst this pandemic, which can serve as a basis for future policy and decision making of the related stakeholders.
CHAPTER 3
METHODS

Research Design

This research used a quantitative, cross-sectional type of study design. Creswell & Creswell (2018) defined survey research as a design that provides quantitative data of trends, attitudes, or opinions of a certain population by studying a subset of that population, while cross-sectional design only collects data at a single point in time. As stated in the framework, the dependent variable will be the Overall Quality of Life while the Characteristics of the Individual and Environment serve as the independent variables. Symptoms, Functional Status, and General Health Perceptions are also considered as independent variables, though at some point and perspective, could also be considered as confounders and mediators. The survey questionnaire tool captures the different characteristics of an individual and the environment they currently belong to, together with other identifiable factors including symptoms, functional status, and general health perception, which, overall, affects the HRQoL. This is done by utilizing and modifying reliable and valid tools on HRQoL specifically during the COVID-19 pandemic and integrating the reviewed literature.

Research Locale

Given the ongoing pandemic, the study was conducted using an online platform and the participants are Physical Therapy students studying at the College of Rehabilitation Sciences – Physical Therapy Department in the De La Salle Medical and Health Sciences Institute (DLSMHSI), Dasmariñas, Cavite.

Study Population

Sampling Method

Convenience sampling was used during the actual data collection. In this study, selected year level of PT students in DLSMHSI, particularly the 2nd year, 3rd year, and Interns (4th year and 5th year) levels are invited
to participate through the college emailing system, CRS Helpdesk, which disseminated the survey tool, and was done from March 1 to March 31, 2022.

**Participants**

The study participants included the 2\textsuperscript{nd} year up to 4\textsuperscript{th} year Physical Therapy students enrolled in the program during the 2\textsuperscript{nd} Semester of School Year 2021-2022. The Inclusion criteria for a prospective participant to take part in the study includes: (1) has read and agreed to the consent form given, *Appendix A*; (2) able to read and understand English language; (3) a bonafide student of Physical Therapy in the De La Salle Medical and Health Sciences Institute; (4) has a reliable internet connection and devices to access the questionnaire online. Meanwhile, participants that are excluded are: (1) first year PT students and (2) transferees from other courses or schools during the Academic Year 2021-2022.

**Research Instrument**

The researcher designed a 45-item survey questionnaire based on the literature studied, mostly patterned on the study by Sirgy (2012) and the Ferrans and Colleagues’ HRQoL model (Ferrans et al., 2005). The COVID-19 – Impact on Quality of Life (COV19-QOL) was embedded in the last part of the questionnaire to help the researcher in identifying the impact of the pandemic on the QoL of people (Repiští et al., 2020). The designed questionnaire is a self-administered and close-ended questionnaire that gathered mainly ordinal and nominal types of data from its questions. The questionnaire is divided into 7 parts: Part 1 – Demographics; Part 2 - Medical Background; Part 3 - Activity, Leisure, and Work; Part 4 – Academics; Part 5 – Personality, Mood, and Sleep; Part 6 – General Health; and Part 7 – COV19-QOL Scale. (*Appendix B*)

Part 1 consists of 11 items regarding the demographics of the respondents particularly age, sex, year level, place of residence, estimated family monthly income, citizenship, religion and spirituality, marital status, family structure, and
parenthood. The ranges included under the estimated family monthly income were adapted from the study of Albert et al. (2018) which is an income range specific for the Filipino household. Other variables were adapted from the study of Guillasper et al. (2021) and the literature review.

Part 2 consists of 4 items, mainly directed to clarify the medical background of the respondent. The questions included seeks to unveil the medical history of COVID-19, the presence of COVID-19 in the household, and the presence of other medical conditions aside from COVID-19. Most of the variables were adapted from Guillasper et al. (2021).

Part 3 consists of 11 items asking the respondents about their engagement in Physical activity, leisure, and work during this pandemic. Few questions about Physical activity were adapted from Harrison et al. (2021) while the others were from the literature review.

Part 4 consists of 8 items pertaining to the academic-related issues and experience of the respondents. The variables presented were adapted from the study of Adedoyin & Soykan (2020). This part seeks to explore the respondent’s views and experiences on online learning during this pandemic.

Part 5 consists of 3 items assessing the personality, mood, and sleep of the respondents. The Big Five Personality Traits and its description were adapted from the study of Ricamara-Corod & M.A. Pysch (2020) which used the said personality traits in assessing Filipino adolescents. Other variables were based on the review of literature.

Part 6 consists of 2 items adapted from a portion of Short Form-36 (SF-36) which is used to assess the general health perception. SF-36 is a self-reported measure of the HRQoL of a person (Hooker, 2013).

Part 7 consists of COV19-QoL, a 6-item scale that covers the main areas of QoL in relation to mental health and was guided by the idea that QoL, mental health, and personal safety are mainly impacted by a large-scale public health issue (Repišti et al., 2020). This scale will be used to determine the overall HRQoL of the participants. While the COV19-QoL Scale is relatively new and further
studies should be done to further enhance this tool, Repišti et al. (2020) mentioned that the COV19-QoL Scale could be used by clinicians and researchers on assessing the impact of the current pandemic on the general population. A higher score will indicate a greater perceived impact of the pandemic on the QoL of the respondent (Repišti et al., 2020).

Both nominal, ordinal, and ratio types of data were collected by the questionnaire. This was done on Google Forms and designed so that the respondents will only be able to answer once, while not being able to input more than one answer per question and leave any unanswered questions behind.

Validation of the Instrument

The 45-item Research Instrument was made from adapting the questions and variables stated in related literatures and modifying them to match the objectives of the study. To ensure the validity of the research instrument, a pretesting was done for a week from February 16-23, 2022. A convenience sampling was used to gather 12 participants. The subsample consisted of four – 3rd year students and eight – 4th year students/ interns, with 8 males and 4 females in total. Pretesting was facilitated through Google Forms. As suggested by Ruel et al. (2016), the pretest and the actual implementation should have the same data collection method which is observed by the researcher. The respondents in the pretest were asked to answer the survey tool and take note of the time it took them to finish it. Specifically, the researcher asked the respondents to give comments and suggestions on the clarity, conciseness, completeness, coherence, and basically give any input that may have relevance to improving the survey tool. After pretesting, the questionnaire underwent necessary changes according to the comments and suggestions made by the pretesting participants (see Appendix C). While a successful pretesting of a survey does not automatically entail the success of the actual study, well-organized, and well-documented pretests help to improve the validity, reliability, accuracy, and efficiency of the questionnaire for the full implementation (Ruel et al., 2016).
The adapted questions, which were already studied for their validity and reliability, include the COV19-QoL which was assessed by Repiští et al. (2020) using clinical and non-clinical samples and was found out to be a valid and reliable scale in exploring the impact of COVID-19 on HRQoL. Repiští et al. (2020) also asserted that the scale has a good construct validity and was found to be internally consistent because the Cronbach’s alpha coefficient was above 0.700. Further, the corrected item-total correlations were above 0.30 which indicated that all the items should be part of the scale and SMCs for all items were greater than .40 which established that it is an internally consistent instrument.

Table 1a. Internal consistency check of the COV19-QoL scale from Repiští et al. (2020)

<table>
<thead>
<tr>
<th>Due to the spread of the coronavirus</th>
<th>Non-clinical sample</th>
<th>Clinical sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected r&lt;sub&gt;it&lt;/sub&gt;</td>
<td>SMC&lt;sup&gt;b&lt;/sup&gt;</td>
<td>α if item deleted</td>
</tr>
<tr>
<td>...I think my quality of life is lower than before</td>
<td>.525</td>
<td>.292</td>
</tr>
<tr>
<td>...I think my mental health has deteriorated</td>
<td>.775</td>
<td>.662</td>
</tr>
<tr>
<td>...I think my physical health may deteriorate</td>
<td>.733</td>
<td>.551</td>
</tr>
<tr>
<td>...I feel more tense than before</td>
<td>.800</td>
<td>.655</td>
</tr>
<tr>
<td>...I feel more depressed than before</td>
<td>.780</td>
<td>.676</td>
</tr>
<tr>
<td>...I feel that my personal safety is at risk</td>
<td>.582</td>
<td>.359</td>
</tr>
</tbody>
</table>

* Corrected item-total coefficients of correlation

<sup>b</sup> Squared Multiple Correlation

The questions under physical activity were adapted from the study of Harrison et al. (2021) which they lifted from the National Health Interview Survey and was mentioned to be a validated instrument by the preceding studies. Question for general health perception was adapted from the SF-36. The reliability and validity of SF-36 have been tested throughout the years as Hooker (2013) mentioned that from its development, numerous articles were already published utilizing the SF-36 and one of those was from Y.Zhang et al. (2012) which utilized the tool to assess the subjective quality of life of the Chinese medical students.
The other questions were aimed to be reviewed and validated through the pretesting while the adapted questions were be assessed for their coherence with the other parts of the tool.

Data Gathering Procedure

The following steps were done for the data gathering:

Phase I: Social Preparation

After the ethics approval of the research proposal by the De La Salle Medical and Health Sciences Institute – Independent Ethics Committee, the researcher conducted the following activities:

1. The researcher coordinated with the Dean of the DLSMHSI – College of Rehabilitation Sciences (CRS) – Physical Therapy (PT) Department and asked for permission regarding the study that will be conducted to its students. This was facilitated through the help of CRS Help Desk.
2. The CRS Help Desk, which can forward the invitation to participate in this research to all the DLSMHSI PT students through their institutional email, was tapped and informed ahead of time before the actual data gathering.
3. The researcher created the questionnaire to be used using Google Forms as its platform. No other data aside from the ones specified in the questionnaire will be gathered. The respondents were required to sign in using their institutional email to limit their responses to one entry only. The researcher would like to point out that the emails of the respondents cannot be collected through signing in to Google Forms. Editing after submission will be forbidden. Respondents are prompted not to leave any unanswered item, otherwise, they cannot submit the form. After completing the questionnaire, respondents will not receive a copy of their responses to limit the possibility of data breaching. The form included both the Informed Consent and the questionnaire itself and the students will automatically be excluded from the study once they chose to not agree to the Informed Consent.
Phase II: Actual Data Gathering

After the preparations in Phase I are done, the following steps were conducted:

1. For the pretesting of this study, 12 selected students were given the link to the questionnaire through a private invitation. According to Ruel et al. (2016), it is a rule of thumb to test the survey on at least 12 to 50 people during pretesting. The 12 selected students were excluded from the overall population size and cannot be further included in the actual implementation.

2. The questionnaire was edited accordingly depending on the comments and suggestions of the pretesting participants and observations of the researcher.

3. For the actual implementation, in adherence to the terms and condition of the CRS, a copy of the questionnaire was created by the CRS Help Desk and its link was sent to the intended participants consisting of 2nd year, 3rd year and Interns (4th year and 5th year) PT students, through Gmail and Microsoft Teams.

4. The form accepted responses for a whole month from March 1 – March 31, 2022. The form was checked from time to time, via CRS Help Desk, to monitor the number of responses. To engage the students, a weekly reminder to answer the survey form was initiated by the researcher, through the CRS Helpdesk. After the implementation period, the researcher asked the CRS Help Desk for the consolidated data and thereafter proceeded to statistical analysis.

Statistical Treatment of Data

The following statistical analyses were mainly used to answer the research questions and test the hypothesis of this research. Descriptive statistics were used to examine the characteristics, behavior, and experiences of the participants.
IBM SPSS Statistics 23 was used to run the regression and generate the tables for the descriptive statistics.

1. Percentage – it represents the proportion of a subgroup to the actual amount of sample (Nieswiadomy & Bailey, 2018). This provides a summary of percentile data which was used in this study to determine the amount (in percentage) of those who answered a certain choice in the questionnaire.

2. Mean – one of the measures of central tendency, defined as the average of all the values added, divided by the total number of values. It is considered the most stable measure of central tendency, given that the distribution is normal (Nieswiadomy & Bailey, 2018). In this study, the mean was used for defining the average score of the respondents under the COV19-QoL tool and for finding the average of the age of participants.

3. Median – one of the measures of central tendency, defined as the middle score or value in a group of data. It is appropriate for ordinal, interval, or ratio types of data and is not being influenced by extreme values (Nieswiadomy & Bailey, 2018). In this study, median has been used to define the middle value in the age of the participants, as well as in their COV19-QoL scores.

4. Mode – one of the measures of central tendency, defined as the category or value that occurs the most in a set of data. It is the only measure of central tendency appropriate for a nominal type of data (Nieswiadomy & Bailey, 2018). In this study, given that most of the questions are nominal and ordinal type of data, the mode was useful for presenting these data.

5. Ordinal Logistic Regression - is a statistical method which aims to find an equation that predicts the outcome for a dependent (nominal or ordinal) variable (Y variable) from one or more independent variables (X variables). Ordinal Logistic Regression Modelling was used to determine the individual and environmental characteristics that would affect the perceived quality of life of the respondents. Ordinal Logistic Regression was used to model the
relationship between an ordinal response variable (COV19QoL Scale) and one or more possible explanatory variable (Part 1 to 6 of the questionnaire).

6. Likelihood Ratio Chi-Square test - was used to determine the best model for this analysis. All factors were used in the initial model to determine the significant factors. Revisions of the model were done to ensure that the Likelihood Ratio Chi-Square Test is significant before final analysis was conducted. Likelihood Ratio Chi-Square Test was used to determine whether the regression model that was run was significant (Under the Omnibus Test Table, the “Sig.” column should be less than 0.05).

7. Wald Chi-Square test – is a statistical method which is used to find out if a particular independent variable in the equation is a significant predictor of the chosen dependent variable. In this study, the Wald Chi-Square Test was used to determine the specific factors that have significant effect on perceived quality of life. Once the result was significant, the “Parameter Estimates” table was checked. Using the Wald Chi-Square Test (Under the Hypothesis Test Column), the independent variables were checked if they have an effect on the dependent variable. The “Sig.” column should be less than 0.05. (Include all tables under Title II. Quality of Life to VII. Risk to Personal Safety)

**Methods Matrix**

In addition to descriptive statistics, the table below reflects the specific statistical method/test that were used to meet the specific objectives of this paper:

<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Sources of Data (kindly refer to Appendix B for the survey tool)</th>
<th>Statistical Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To assess the overall HRQoL of PT students in DLSMHSI</td>
<td>All types of data gathered from the respondents were statistically treated to determine the overall HRQoL which is the convergence point of all variables included in the</td>
<td>• Ordinal Logistic Regression (for modelling purposes)</td>
</tr>
</tbody>
</table>
2. To determine the individual characteristics that would affect the HRQoL

By definition, this study objective pertains to the characteristics innate to the individual which includes the student’s demographical data and psychological aspect such as personality and mood.

Questions under the Demographics section and Personality, Mood, and Sleep are included to answer this specific objective.

3. To determine the environmental characteristics that would affect the HRQoL

By definition, these are the social or physical influences that are external to the individual.

Some questions under Medical Background, Activity, Leisure, and Work, and Academics are included to answer this specific objective.

4. To determine other factors such as symptoms, functional status, and general health perception that would affect the HRQoL

Some questions under Medical Background, General Health Perception, and Activity, Leisure, and Work are included to answer this specific objective.

Ethical Considerations

The ethical considerations for this study included details on the informed consent, benefits, potential risk, protection of participants, attributions & permissions, and sharing of results.

Informed Consent

The informed consent form was given through Google Forms together with the questionnaire and it gave information to the prospective
respondents on the following: (1) title of the research and invitation to participate, (2) objectives of the study, (3) inclusion and exclusion criteria, (4) possible benefits by participating in the study, (5) voluntary participation to the study, (6) right to withdrawal from the study at any point in time, (7) confidentiality of the information gathered, (8) anonymity of the respondents when the study is published, (9) contact number of the researcher and the DLSMHSI Independent Ethics Committee. Various Google services including Gmail, Google Forms, and Google Drive, which this study mainly utilized for the online data gathering have an included HIPAA functionality (Google, 2020). HIPAA or the Health Insurance Portability and Accountability Act of 1996 “is a federal law that establishes data privacy and security requirements for organizations that are charged with safeguarding individuals' protected health information (PHI)” (Google, n.d.). Ticking the box “Yes, I have read the Informed Consent and will participate in this study” redirect the respondents to the questionnaire, which, at any point in time, should the respondents wanted to withdraw from the study, the respondents can do so by just closing the tab or the browser where the link to the questionnaire had been opened. Once the respondents chose to submit the form, the data will now be available to the researcher. All electronically gathered data from the respondents was used solely for the purpose of this research only.

**Benefits**

This research mainly benefits the students, as this is a study about their Health-Related Quality of Life wherein the information that was gathered can be utilized by the students themselves, the faculties in the college, and the school administrators to make sufficient adjustments or supplement the current measures in helping the students to have a better quality of life during their stay in the college. Future researchers could also benefit from this study especially in the Philippines wherein the research on the quality of life in general, amidst the COVID-19 pandemic, is scarce.
Potential risk/discomforts

Participants of this study were not exposed to any form of harm, as this study only collected quantitative cross-sectional data pertinent to Health-Related Quality of Life. Consequently, a potential risk in the study as to breach of data is possible given that this study utilized online resources. This breach of data can be induced by various reasons both controllable and uncontrollable by the researcher such as negligence or misconduct in handling the data by those who are able to access it, or a problem with Google services security. Utmost prudence was observed by the researcher to prevent the potential risks from happening.

Protection and Participants

The researcher held the strictest confidentiality as to the data given by the respondents of this study. This was done through the following measures: (1) names and emails of the respondents were not asked in the questionnaire, (2) the raw data is only available to the researcher, CRS Help Desk and the statistician, while the consolidated results of this research can be provided to the respective participants for transparency upon their request, (3) this research utilized Google services which complies with the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and assures the security of the data that will be gathered, (4) after the study, all copies of the consolidated data of the respondents will be deleted immediately to prevent any possible breach of data.

Sharing of Results

The results of this study will be given to the participants upon their request. The request can be done through the provided email of the researcher and will be sent accordingly.
CHAPTER 4
RESULTS AND DISCUSSION

This chapter provides the data gathered to address the objectives as well as describe the results of the study with reference to the literature acquired by the researcher. The presentation of results starts with the demographic data down to the COV19-QoL Scale scores of the participants. Meanwhile, the discussion will be anchored on the COV19-QoL scores of the participants and also present the findings of the study for each objective set.

Results

Demographics

Using quota sampling, a total of 77 single Filipino students of the DLSMHSI PT program participated in the online survey that was conducted from March 1, 2022 to March 31, 2022. The respondents’ age range between 19 to 24 years old, with the mean, median and mode score at 21 years old.

Out of the 77 respondents, most were 3rd year students, while almost similar numbers of 2nd and 4th year students participated in the study. More than half (65%) of the respondents were female, 29% were male, while only 6% belong to the LGBTQ+.
At the time of the COVID-19 Pandemic, 61% of the respondents were practicing any religious practices and beliefs while 39% answered that they did not take part in such activities.

Similarly, 78% of the respondents were residing in an urban area while 22% were living in a rural area. Majority came from the CaLaBaRZon
Region at 81% while 16% were from the National Capital Region. Few respondents were from Region 3 at 2.6% and Region 8 at 1.3%.

Eighty-three percent of the respondents were residing with their family members, while 10% were living with family and other relatives. A smaller proportion of the participants were either living with relatives only, living with non-relatives or living independently. Only one respondent has a child (1%) while the rest of the respondents (99%) do not have children or were not expecting.

Thirty-one percent of the respondents have an estimated monthly family income between PhP40,000 to PhP79,999. On the other hand, 29% were earning PhP80,000-PhP199,999 monthly. Around 18% have an
estimated family income of at least PhP200,000 a month while 16% of the respondents’ families were earning PhP10,000 to PhP39,999. A small proportion (6%) reported that they have an estimated monthly family income of below PhP10,000.

In terms of COVID-19 infection, 47% of the respondents answered that they were never clinically diagnosed with the disease nor had a household member that was infected with the virus. On the other hand, 32% mentioned that they never had the infection but a household member was clinically diagnosed with COVID-19 through RT-PCR. Seventeen percent of the participants have been diagnosed with COVID-19 infection and with a household member that was also diagnosed with the infection. Only a minority of the respondents (4%) were clinically diagnosed but has no other household members that had the illness.
Majority of the respondents (81%) reported that they do not have existing co-morbidities while 19% of them have co-morbidities. Out of these 15 respondents (19%), 11 of them (73%) have musculoskeletal disorders, three (20%) have medical and surgical conditions while one (7%) have psychiatric conditions.

![Figure 10A. Presence of Comorbidities of Participants](image)

![Figure 10B. Comorbidities of Participants](image)

**Activity, Leisure, and Work**

Leisurely activities such as playing video games, surfing the internet, and browsing social medias, together with watching television shows, movies, and anime garnered the highest percentages of ‘Often’ engagements at 71% and 69% respectively. This is followed by doing household chores at 48% and engaging in reading, writing, studying, and other literary activities at 43%. Meanwhile, engaging in sports or going to the gym had the lowest engagements with 34% of the participants answering that they never engaged in this activity during this pandemic.
Likewise, the activity levels of the participants were measured with a Likert scale resulting in a higher percentage of ‘Fair’ activity levels at 36% followed by ‘High’ activity levels at 31%.

Figure 11. Activity Engagements of the Participants
Only 22% of the respondents answered that they were engaging in an income-generating activity at the time of survey. Out of those who answered ‘Yes,’ majority said they worked for more than 8 hours per day.

**Academics**

While most of the participants at 65% answered ‘Yes’ that they feel that their technological devices for online classes are adequate, majority at
62% also experienced intrusions from household members or pets and the likes. As for the question about adequacy of the methods of the CRS to teach the PT subjects, majority at 44% answered 'No', while only 19% answered 'Yes.'

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Sometimes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you consider your currently available technological devices to be enough in helping you perform your tasks as a student?</td>
<td>17</td>
<td>23</td>
<td>50</td>
</tr>
<tr>
<td>While having a class or doing your school-related activities, do you experience any intrusions from your household members and/or pets?</td>
<td>23</td>
<td>25</td>
<td>52</td>
</tr>
<tr>
<td>In general, were you able to adapt in the digital method of learning?</td>
<td>34</td>
<td>34</td>
<td>32</td>
</tr>
<tr>
<td>In general, do you think your outputs and performance are appropriately assessed and graded?</td>
<td>24</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>In general, do you think you are adequately supervised by your professors/lecturers?</td>
<td>27</td>
<td>27</td>
<td>46</td>
</tr>
<tr>
<td>Do you believe that the workload imposed on students were reasonable and appropriate?</td>
<td>17</td>
<td>17</td>
<td>66</td>
</tr>
<tr>
<td>Do you believe that in your current year level, the Physical Therapy course can be adequately taught using the current means and methods of the college?</td>
<td>28</td>
<td>28</td>
<td>44</td>
</tr>
</tbody>
</table>

Figure 14. Learning Experience of the Participants

More than half of the respondents answered that they consider their academic performance during the pandemic as 'Fair.' Another 25% answered good, while 13% of the respondents said that they have poor
academic performance during the pandemic. Four percent answered that they were at their best performance during the pandemic while 5% mentioned that they are performing very poorly.

**Figure 15. Academic Performance of the Participants**

**Personality, Mood, and Sleep**

The respondents were asked to take the Big 5 Personality Trait Test to be able to answer the corresponding question. Thirty-nine percent of the respondents were categorized to have the openness personality while 32% of them have agreeableness personality. Fourteen percent have neuroticism personality. A small proportion of the participants have conscientiousness personality at 8% while 6% of them have extraversion personality.

**Figure 16. Personality of the Participants**

Meanwhile, 43% of the respondents answered that they had a fair mood during the pandemic while 9% mentioned that they had very poor mood.
mood. The rest of the respondents were either having a good or poor mood during the pandemic.

![Figure 17. Mood of the Participants](image1)

A total of 48% of the respondents had poor or very poor sleep quality during the course of the pandemic while 49% answered that they had fair to good sleep quality. Only 3% answered that they experienced the best sleep quality during the pandemic.

![Figure 18. Sleep Quality of the Participants](image2)

**General Health Perception**

The respondents were also asked to compare their health perception before and during the pandemic. More than half of the respondents (60%) answered that their general health is lower during the pandemic than before the pandemic. On the other hand, 14% mentioned that their health improved during the pandemic as compared to before. Twenty-six percent rated that their health is the same before and during the pandemic.
Moreover, at 0.05 level of significance, there was a significant difference between the perceived health status of the participants before and during the pandemic.

**COV19-QoL Scale**

More than half of the participants (51%) agreed that their QoL is lower than before, compared to the 29% of those who disagreed. Twenty-one percent, however, were undecided whether their quality of life had improved or deteriorated. Similarly, 56% of the participants agreed that...
their physical health may have deteriorated while only 24% disagreed and 12% are left undecided.

The deterioration of the mental health of the participants as well as their feelings about being tense and depressed during this pandemic also has a greater proportion of respondents who agreed to it, with 61% who feels that their mental health has deteriorated and feels more tense and
46% of who were feeling depressed. As to personal safety, majority disagreed that they are at risk, with 58% disagreeing compared to 22% who agreed.

**Table 3**  
*COVID-19-QoL Scale (analysis for Overall HRQoL)*

<table>
<thead>
<tr>
<th>Scores</th>
<th>Frequency</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to &lt;1.5</td>
<td>1</td>
<td>1.30%</td>
<td>1.30%</td>
</tr>
<tr>
<td>1.5 to &lt;2</td>
<td>3</td>
<td>3.90%</td>
<td>5.19%</td>
</tr>
<tr>
<td>2 to &lt;2.5</td>
<td>5</td>
<td>6.49%</td>
<td>11.69%</td>
</tr>
<tr>
<td>2.5 to &lt;3</td>
<td>4</td>
<td>5.19%</td>
<td>16.88%</td>
</tr>
<tr>
<td>3 to &lt;3.5</td>
<td>17</td>
<td>22.08%</td>
<td>38.96%</td>
</tr>
<tr>
<td>3.5 to &lt;4</td>
<td>16</td>
<td>20.78%</td>
<td>59.74%</td>
</tr>
<tr>
<td>4 to &lt;4.5</td>
<td>18</td>
<td>23.38%</td>
<td>83.12%</td>
</tr>
<tr>
<td>4.5 and more</td>
<td>13</td>
<td>16.88%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Total score per respondent was calculated by getting the average of the scores on all the items. In summary, the overall mean score is 3.30, median score is 3.5 while mode score if 2.67. Nine or 11.69% of the respondents reported that they have minimal to no perceived impact (Score: 1 to <2.5) of the pandemic on their overall quality of life. On the other hand, 21 or 27.27% of the participants reported moderate perceived impact (Score: 2.5 to <3.5) of the pandemic on their quality of life. Majority of the respondents (47 or 61.04%) have greater perceived impact (Score: =>3.5) of the pandemic on their quality of life.
Further, each component of the COV19-QoL scale was statistically tested to find out which variable is a significant predictor for that component. This should answer the remaining objectives of the study. For this purpose, Ordinal Logistic Regression Modelling was used to determine the individual characteristics that would affect the perceived quality of life of the respondents. Wald Chi-Square Test was used to determine the specific factors that have significant effect on perceived quality of life. The Likelihood ratio chi-square test (under the Omnibus Test table) was used to determine the best model for this analysis. All factors were used in the initial model to determine the significant factors. Revisions of the model were done to ensure that the Likelihood Ratio Chi-Square Test is significant before final analysis was conducted. The parameter estimates using the Wald-Chi Square Test is presented in the following pages while the other statistical treatment methods can be found in Appendix D.

Table 4. Parameter Estimates for QoL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>Std. Error</th>
<th>95% Wald Confidence Interval</th>
<th>Wald CHI Square</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
<th>95% Wald Confidence Interval for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold</td>
<td>-5.953</td>
<td>4.8163</td>
<td>-15.393</td>
<td>3.497</td>
<td>1</td>
<td>.216</td>
<td>.003</td>
<td>2.066E-7</td>
</tr>
<tr>
<td>PlaceofResidence</td>
<td>1.781</td>
<td>.3539</td>
<td>5.206</td>
<td>7.945</td>
<td>1</td>
<td>.005</td>
<td>5.301</td>
<td>1.707E-5</td>
</tr>
<tr>
<td>HealthPerception</td>
<td>1.238</td>
<td>.3421</td>
<td>4.139</td>
<td>14.404</td>
<td>1</td>
<td>.000</td>
<td>3.663</td>
<td>1.874E-7</td>
</tr>
<tr>
<td>Supervision</td>
<td>.926</td>
<td>.2759</td>
<td>3.270</td>
<td>1.576</td>
<td>1</td>
<td>.008</td>
<td>2.524</td>
<td>1.317E-3</td>
</tr>
<tr>
<td>Age</td>
<td>.527</td>
<td>.2387</td>
<td>.999</td>
<td>4.877</td>
<td>1</td>
<td>.227</td>
<td>.590</td>
<td>.376E-1</td>
</tr>
<tr>
<td>Mood</td>
<td>.535</td>
<td>.2498</td>
<td>.945</td>
<td>1.024</td>
<td>1</td>
<td>.032</td>
<td>1.707</td>
<td>1.046E-1</td>
</tr>
</tbody>
</table>

Dependent Variable: QualityofLife
Model: (Threshold), PlaceofResidence, HealthPerception, Supervision, Age, Mood
a. Fixed at the displayed value.

- Place of Residence – The place of residence was a significant positive predictor of perceived quality of life of the respondents. The log odds of having better quality of life was 1.781 higher for those residing in urban areas than those in rural areas. This would mean that those living in urban areas have better perceived quality of life than those living in rural areas.
• Health Perception – The health perception of the respondent before and during the pandemic was a significant positive predictor of perceived quality of life of the respondents. For every unit increase in the health perception of the respondent, there is a predicted increase of 1.298 in the log odds of being in a higher perceived quality of life. This means that those who have same level of health perception and increased health perception during the pandemic have higher perceived quality of life than those with decreased health perception during the pandemic.

• Supervision – The level of supervision received by the respondents from their professors/lecturers was a positive predictor of perceived quality of life of the respondents. For every one unit increase in the level of supervision, there is a predicted increase of 0.926 in the log odds of being in a higher category in perceived quality of life. Those who receive higher levels of supervision from their professors/lecturers have higher perceived quality of life.

• Age – Age was a significant negative predictor of perceived quality of life. For every increase in age, there is a predicted decrease of 0.527 in the log odds of perceived quality of life. Meaning, those who were older have poorer perceived quality of life.

• Mood – Mood was a significant positive predictor of perceived quality of life. For every unit increase in the mood, there is a predicted increase of 0.535 in the log odds of perceived quality of life. Those who rated themselves to have better mood during the pandemic have better perceived quality of life.
Mood – Mood was a significant positive predictor of mental health. For every unit increase in the mood, there is a predicted increase of 0.508 in the log odds of being in a good mental health state during the pandemic. This means that those who rated themselves to have better mood during the pandemic have better perceived mental health state.

Place of Residence - The place of residence was a significant positive predictor of mental health of the respondents. The log odds of having better quality of life was 1.646 higher for those residing in urban areas than those in rural areas. Those living in urban areas have better perceived mental health status than those living in rural areas.

TechDevice – The adequacy of the technological device being used by the respondent was a positive significant predictor of mental health. For every unit increase in the adequacy of technological device, there is a predicted increase of 0.708 in the log odds of good perceived mental health state. This means that those who consider themselves to have adequate technological devices have better perceived mental health status.

Supervision – The level of supervision received by the respondents from their professors/lecturers was a positive predictor of mental health of the respondents. For every one unit increase in the level of supervision, there is a predicted increase of 0.571 in the log odds of...
having good perceived mental health state. Meaning, those who receive higher levels of supervision from their professors/lecturers have better perceived mental health status.

Table 6.
Parameter Estimates for Physical Health

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>Std. Error</th>
<th>95% Wald Confidence Interval</th>
<th>Hypothesis Test</th>
<th>Exp(B)</th>
<th>95% Wald Confidence Interval for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td>Wald Chi-Square</td>
<td>df</td>
<td>Sig.</td>
<td>Lower</td>
</tr>
<tr>
<td>Threshold</td>
<td>.966</td>
<td>.7879</td>
<td>-.678 .578</td>
<td>2.510</td>
<td>.100</td>
<td>2.628</td>
</tr>
<tr>
<td>[PhysicalHealth=Agree]</td>
<td>2.201</td>
<td>.6270</td>
<td>.580 3.822</td>
<td>7.083</td>
<td>.008</td>
<td>9.033</td>
</tr>
<tr>
<td>[PhysicalHealth=Completely disagree]</td>
<td>3.823</td>
<td>.9164</td>
<td>2.027 5.619</td>
<td>17.403</td>
<td>.000</td>
<td>45.745</td>
</tr>
<tr>
<td>[PhysicalHealth=Disagree]</td>
<td>.720</td>
<td>.2950</td>
<td>-1.298 .142</td>
<td>5.952</td>
<td>.015</td>
<td>.487</td>
</tr>
<tr>
<td>Yearlevel</td>
<td>.663</td>
<td>.3076</td>
<td>.060 1.266</td>
<td>4.651</td>
<td>.031</td>
<td>1.941</td>
</tr>
<tr>
<td>FamilyStructure</td>
<td>.465</td>
<td>.2343</td>
<td>-.025 .094</td>
<td>2.293</td>
<td>.136</td>
<td>1.591</td>
</tr>
<tr>
<td>ActivityLevel</td>
<td>.684</td>
<td>.3079</td>
<td>.081 1.288</td>
<td>4.940</td>
<td>.026</td>
<td>1.982</td>
</tr>
<tr>
<td>HealthPerception (Scale)</td>
<td>a</td>
<td>Fixed</td>
<td>a Fixed</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

- Year Level – The year level was a significant negative predictor of physical health of the respondents. For every unit increase in the year level, there is a predicted decrease of 0.720 in the log odds of having good physical health. This would mean that the higher the year level, the poorer the perceived physical health.

- Family Structure – The family structure was a significant positive predictor of physical health of the respondents. For every unit increase in the family structure category, there is a predicted increase of 0.663 in the log odds of having good physical health. This means that other family structures have better perceived physical health compared to those living with their families.

- Activity Level - The activity level was a significant positive predictor of physical health of the respondents. The higher the reported activity level, the better the physical health of the respondent.

- Health Perception – The health perception of the respondent before and during the pandemic was a significant positive predictor of physical health of the respondents. Those who have same level of health perception and increased health perception during the pandemic have
better physical health than those with decreased health perception during the pandemic)

### Table 7. Parameter Estimates for 'Feeling Tense'

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>Std. Error</th>
<th>95% Wald Confidence Interval</th>
<th>Hypothesis Test</th>
<th>Exp(B)</th>
<th>95% Wald Confidence Interval for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Threshold</td>
<td></td>
<td></td>
<td>2.088</td>
<td>-</td>
<td>3.675</td>
<td>1</td>
</tr>
<tr>
<td>[Tense=Completely agree]</td>
<td>-</td>
<td>.9116</td>
<td>-</td>
<td>.381</td>
<td>3.243</td>
<td>1</td>
</tr>
<tr>
<td>[Tense=Disagree]</td>
<td>2.705</td>
<td>.8775</td>
<td>2.425</td>
<td>2.276</td>
<td>.358</td>
<td>1</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td>1.028</td>
<td>.3102</td>
<td>.302</td>
<td>1.753</td>
</tr>
<tr>
<td>Ininsertion</td>
<td>-</td>
<td>.3409</td>
<td>1</td>
<td>.390</td>
<td>-</td>
<td>1.753</td>
</tr>
<tr>
<td>(Scale)</td>
<td></td>
<td></td>
<td>1.018</td>
<td>.3102</td>
<td>.302</td>
<td>1.753</td>
</tr>
</tbody>
</table>

- **Sex** – Sex was a significant positive predictor of feeling tense. Compared to females, males and LGBTQ+ respondents were feeling more tense during the pandemic.

- **Intrusion** – Experience of any intrusion during class or while performing school-related activities was a significant negative predictor of feeling tense. For every unit increase in the experience of intrusion, there is a predicted decrease of 0.722 in the log odds of feeling tense. Respondents that experience intrusions during class or while performing school-related activities felt less tense.

### Table 8. Parameter Estimates for 'Feeling Depressed'

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>Std. Error</th>
<th>95% Wald Confidence Interval</th>
<th>Hypothesis Test</th>
<th>Exp(B)</th>
<th>95% Wald Confidence Interval for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Threshold</td>
<td></td>
<td></td>
<td>1.519</td>
<td>.6945</td>
<td>.158</td>
<td>2.860</td>
</tr>
<tr>
<td>[Depressed=Agree]</td>
<td></td>
<td></td>
<td>1.519</td>
<td>.6945</td>
<td>.158</td>
<td>2.860</td>
</tr>
<tr>
<td>[Depressed=Completely disagree]</td>
<td>-</td>
<td>.8598</td>
<td>1.943</td>
<td>5.063</td>
<td>19.373</td>
<td>1</td>
</tr>
<tr>
<td>Mood</td>
<td></td>
<td></td>
<td>1.056</td>
<td>.2551</td>
<td>.560</td>
<td>1.552</td>
</tr>
</tbody>
</table>

- **Mood** – Mood was a significant positive predictor of feeling depressed. For every unit increase in the mood, there is a predicted increase of 1.056 in the log odds of feeling depressed. Those who rated themselves to have better mood during the pandemic may have feelings of depression.
Table 9.
Parameter Estimates for ‘Personal Safety’

<table>
<thead>
<tr>
<th>Parameter</th>
<th>B</th>
<th>Std. Error</th>
<th>Wald Confidence Interval</th>
<th>Hypothesis Test</th>
<th>Exp(B)</th>
<th>95% Wald Confidence Interval for Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Threshold</td>
<td>-1.624</td>
<td>.3912</td>
<td>17.237</td>
<td>1</td>
<td>.000</td>
<td>.197</td>
</tr>
<tr>
<td>[PersonalSafety=Disagree]</td>
<td>2.000</td>
<td>.494</td>
<td>1.198</td>
<td>2.802</td>
<td>23.872</td>
<td>1</td>
</tr>
<tr>
<td>Exposure to COVID</td>
<td>.658</td>
<td>.236</td>
<td>-1.195</td>
<td>1.570</td>
<td>7.768</td>
<td>1</td>
</tr>
</tbody>
</table>

(Scale)
Dependent Variable: Personal Safety
Model: (Threshold, Exposure to COVID, Family Structure)
a. Fixed at the displayed value.

- Exposure to COVID – Exposure to COVID-19 was a significant positive predictor of perceived risk to personal safety. For every unit increase in category for exposure, there is a predicted increase of 0.658 in the log odds on the feelings of risk to personal safety. Feelings of perceived risk to personal safety is higher for those who have previous COVID-19 infection and/or with household members who were clinically diagnosed with COVID as compared to those with no history of exposure.

- Family Structure – The family structure was a significant negative predictor of perceived risk to personal safety. For every unit increase in the family structure category, there is a predicted decrease of 0.641 in the log odds of being in a higher level of risk to personal safety. Compared to those living with their family, respondents that have other family structure have lesser feelings of risk to personal safety.

Discussion

The study aimed at investigating whether the identified variables under the Ferrans and Colleagues’ HRQoL model such as characteristics of the environment and individual, symptoms, functional status, and general health perception have significant effect on the overall Health-Related Quality of Life among the PT students of DLSMHSI in the Philippines during the time of COVID-19 pandemic. Moreover, it also aimed to explore the extrinsic and intrinsic factors that would have affected the HRQoL, as well as the other factors stated in the
Ferrans and Colleagues’ HRQoL model. The flow of discussion is anchored on the results of COV19-QoL scores of the participants. It has been statistically treated using Ordinal Logistic Regression, Wald Chi-Square, and Likelihood Ratio Chi-Square tests to extract the significant predictors that may have an effect to the overall QoL of the participants.

The results of the study identified the significant predictors that affect the QoL of a person. Based on the final model (see Table 4), the place of residence (p<0.005), health perception (p<0.000), adequate supervision in academic outputs (p<0.005), age (p<0.027), and mood (p<0.032) were significant predictors of perceived quality of life of the respondents. The quality of life identified here is defined by Repišti et al. (2020) as patients’ feelings about the impact of the current pandemic on their quality of life in general. While the terms QoL, HRQoL, and overall HRQoL may have been used interchangeably throughout this paper; the researcher would like to emphasize that QoL and HRQoL, in the context of COVID-19 have been used interchangeably as well throughout the reviewed literature. Meanwhile, overall HRQoL in accordance with the Ferrans and colleagues’ HRQoL model, is the convergence of all the factors included in the model. This means that all of these factors such as the characteristics of the individual and environment, biological function, symptoms, functional status, and general health perception has some sort of impact on the overall HRQoL of a person. In this study, the place of residence, health perception, supervision, and mood were all found to be significant positive predictors of perceived quality of life of the students, while age was found to be a significant negative predictor.

As to the mental health of the participants (see Table 5), the mood (p<0.033), place of residence (p<0.004), adequacy of technological devices (p<0.028), and adequate supervision in academic outputs (p<0.047) were significant predictors of mental health of the respondents. All factors listed were positive predictors of mental health. On a similar note, the sex (p<0.006) and intrusions experienced while having class or doing school-related activities (p<0.034) were significant predictors of the tense feeling (see Table 7) of the
respondents. Sex was found to be a significant positive predictor while intrusions experienced during class or while performing any school-related activities was a significant negative predictor. Meanwhile, the mood (p<0.000) of the respondent during the pandemic is a significant positive predictor of feeling depressed (see Table 8). According to Repišti et al. (2020), the mental health in COV19-QoL scale asks for the participants’ perception of any mental health deterioration during this pandemic. On the other hand, the items pertaining to the tense feeling and feeling depressed intends to measure the levels of anxiety and depression due to the pandemic (Repišti et al., 2020). In this paper, the researcher bundled the feeling tense and depressed to mental health since anxiety and depression are components to it. Mental health and its associated terminologies such as mood, emotion, etc. were all thoroughly discussed together with QoL or HRQoL in the reviewed literature within the context of COVID-19 pandemic and were found out to be affected negatively (Al Dhaheri et al., 2021; Guillasper et al., 2021; Jaspal & Lopes, 2021; Rabacal et al., 2020; Son et al., 2020).

As to physical health (see Table 6), the year level (p<0.015), family structure (p<0.031), activity level (p<0.038) and health perception (p<0.026) were significant predictors of physical health of the respondents. Family structure, Activity Level, and Health Perception were all considered as significant positive predictor while year level was found to be a significant negative predictor. Repišti et al. (2020), identified this item as something that asks for the participants’ perception of any physical health deterioration during this pandemic. Just like the QoL and Mental Health, it has been found that physical health also declined during the COVID-19 pandemic (Alaya et al., 2021; Lizana et al., 2021; Tran et al., 2020) which is generally attributed to decreased activity because of the lockdowns and restrictions. Further, the results of the study by Ozdemir et al. (2020) revealed that regular physical activity is an effective, essential, and inexpensive way to protect the mental health of individuals which is needed to achieve optimal health.

Moreover, the exposure to COVID-19 infection (p<0.005) and family structure of the respondent (p<0.033) are significant predictors of the perception
of respondents regarding their personal safety (see Table 9). Having been exposed to COVID-19 was a significant positive predictor of perceived risk to personal safety while the family structure to which one belongs to was found out to be a negative predictor. Repišti et al. (2020) defined the last item in the COV19-QoL Scale as the extent to which patients perceive their personal safety being at risk. As described by Delgado et al. (2020), personal safety in the context of COVID-19, also includes the Personal Protective Equipment (PPE) which, the people experienced some shortage during the early phase of the pandemic. While personal safety did not receive the limelight to most of the research done during this pandemic, Rabacal et al. (2020) found that it is one of the factors which the COVID-19 had an impact on as well.

**Individual characteristics that affect HRQoL**

**Age**

In this study, age was found to be a significant predictor of quality of life and those who were older have poorer perceived quality of life. The age range of the participants in this study is from 19-24 years old, with age 21 as the average. According to WHO, the age group of 15-24, which the students belong to, can be defined as ‘Youth’ while Arnett (2000) defined the age range of 18-25 as ‘Emerging Adulthood.’ Lipskaya-Velikovsky (2021) stated that young adults, together with the women and unemployed, belong to the group that have unique characteristics and actions should be focused to limit the further impact of pandemic to them. Similarly, Yee et al. (2021) also reported that there is an increased likelihood of feeling depressed among the younger age group. In general, although the related literature revealed that the age group to which the PT student belongs to are prone to decreased perception of quality of life, specifically, the older students compared to the younger perceived their quality of life to be less. This can be connected to the year level of the student where being in a
higher year can lead to more stress due to the workload and expectations in the field.

Sex

The results of this study showed that majority of the respondents were females while only a few identified themselves as part of the LGBTQ+. The sex of the student was considered as a significant predictor of the tense feeling during this pandemic which is associated with mental health and ultimately the HRQoL. In general, current literature on the COVID-19 pandemic suggest that females were more affected compared to males (Amerio et al., 2022; Arab-Zozani et al., 2020; Azizi et al., 2020; Buselli et al. 2020; Chen et al., 2020; Guillasper et al., 2021; Huang et al., 2020; Lipskaya-Velikovsky, 2021; Lizana et al., 2021; McGuine et al., 2020; Rezapour et al., 2022; Tee et al., 2020; Wunsch et al., 2021). Meanwhile, Jaspal and Lopes (2021) suggests minority groups such as those who are part of the LGBTQ+ may have poorer mental health outcomes due to stress and discrimination. As to the academic domain, Korlat et al. (2021) revealed that both males and females have the same levels of perceived abilities in digital learning. This is important to consider as well since the result of this study showed that compared to females, males and LGBTQ+ respondents were feeling more tense during the pandemic, which may have an effect to the learning ability of the student. The findings from the study of Amerio et al. (2022) provided an explanation that while females were still mostly affected by the pandemic, males were found to be particularly affected by circumstances such as caring for sick persons at home, living in poor housing quality, and worsening academic performance compared to females.

Family structure

In this study, the family structure of the respondents was found to be a significant predictor of both personal safety and physical health. Most
of the respondents live with only their nuclear family during the pandemic. Other forms of family structure compared to those living with their family, showed better perceived physical health and have lesser feelings of risk to personal safety. Michalos and Orlando (2006) stated that a college student’s well-being can be determined by his/her satisfaction on personal domains such as family relation. Caring for or being concern about a family member health status may negatively affect a student’s HRQoL (Tee et al., 2020; Rezapour et al., 2022). Consequently, Gouveia et al. (2021) found out that during the COVID-19 pandemic, different family structures such as belonging in either complex families, single parents, with young sibling, or living with non-relatives during lockdown had a higher risk of experiencing deterioration in their material and subjective living conditions.

Place of residence

Majority of the respondents of this study were living in CaLaBarZon and mostly in urban areas. The place of residence was found to be a significant predictor of mental health and quality of life. Those living in urban areas have better perceived quality of life and mental health status than those living in rural areas. Highly urbanized area may have better access to internet connectivity and facilities that can be used for studying such as study pods or libraries compared to rural areas. In line with this, Mouratidis (2021) identified that in urban areas, access to healthcare and related facilities, inducive environment for walking and cycling, having a private means of transportation or COVID-secure public transport, access to urban nature, having better quality and dimension of housing, access to outdoor area, and access to Internet and Communications Technology (ICT) leads to a better overall quality of life. Meanwhile, the other listed factors may hold true to rural communities as well except for the fact that they might have more existing nature and better environment for walking
or cycling, but on the flipside, the rural residences may have lesser means and access to healthcare, ICT, and transportation.

*Year level*

There was no known literature available to the researcher as of this writing that identifies the differences of perceived HRQoL between each year level in the Physical Therapy course in particular. Although in this study, the results suggest that the higher the year level, the poorer the perceived physical health. The general assumption of the researcher is that the higher the year level is, the higher the expectations that may come from the professors which may affect the physical and mental health of the students due to unsolicited pressure. This is backed up by the findings of Stoikov et al. (2022) on their study about PT students that as students proceed to a more qualified role, there will be lesser supervision accompanied with greater expectations of being independent. Not to mention, the study by Porter-Armstrong (2021) revealed that that most participants on their survey, including the Physical Therapy profession, fear on joining the workforce due to a probable inadequate support to their future work environment and suggests that COVID-19 pandemic may have added another complexity to student anxieties especially to the graduating students who were about to transition to the working class. Son et al. (2020) also highlighted the importance of mental health concerns in college students since the pandemic brought forth negative impact on higher education. In this study, year level was found out to be a significant predictor of one’s physical health which is ultimately a part of HRQoL. Across year levels, there may be different time commitments needed to study the learning materials provided which may impact one’s physical health in the process. Also, at the time of implementation, a limited face-to-face internship is being experienced by some of the respondents, particularly the 4th and 5th year students. This scenario may have placed
their perception of their own physical health on the poorer side since they are exposed to different agents that may cause illnesses or infection such as upon travelling or through patient handling.

**Mood**

Findings of this study revealed that the mood of the participants were significant predictors of their mental health. Those who rated themselves to have better mood during the pandemic have better perceived mental health state. The mood of a person can be correlated to various factors, including genetics and personality trait (Sirgy, 2012). While genetics is something that is out of the scope of this study, personality trait was measured and majority of those students who answered the survey had a personality trait of ‘Openness’ and ‘Agreeableness.’ However, during this pandemic, these traits were not usually the point of discussion among the reviewed literatures. It was usually the ‘Extraversion’ and ‘Neuroticism’ trait that are being thoroughly discussed. In a study by Shokrkon & Nicoladis (2021), higher score on the 'Neuroticism' trait are experiencing more mental health problems and is associated negatively with emotional, psychological, and social well-being. In contrast, higher score on ‘Extraversion’ trait is usually associated with a higher emotional, psychological, and social well-being and experiences lesser mental health issues as a result of the pandemic. Oppositely, the study by Rettew et al. (2021) suggests that higher levels of extraversion lead to decreased mood as the pandemic progresses compared to those with lower levels of extraversion wherein a slight increase in mood can be seen over time. While the number of students in this study who considered themselves as either neurotic or extrovert is low, still, it is an important thing to consider. An improved mood and having more wellness activities was found to be significantly associated with lower levels of neuroticism and higher levels of extraversion, openness, agreeableness, and conscientiousness (Rettew
et al., 2021). In general, mood and its correlates such as emotion, temperament, and psychological state were found out to be lower, affecting the students negatively across different studies (Hendriksen et al., 2021; Rezapour et al., 2022; Villani et al., 2021). Rezapour et al. (2022) identified factors that may affect the emotions and mood state of the students during the COVID-19 pandemic which includes being female and older, having a higher education, having poor health, and higher BMI. Similarly, specific among the Filipinos, Tee et al. (2020) found out that women, age 12-21 years old, being single, students, having COVID-19 related symptoms (i.e., headache, cough, chills), being quarantined and prolonged stay at home, self-reported health status was poor, unnecessary worry on COVID-19, concern about family member health status, and feeling of being discriminated by other nations were all correlated with a greater psychological impact and higher levels of stress, anxiety, and depression.

**Environmental characteristics affect HRQoL**

*Adequacy of Technological Devices, Supervision in Academic Outputs, and Intrusions Experienced while having Class*

Interestingly, aside from the COVID-19 infection of the household members of the respondents, the findings of this study suggests that the focus of environmental deterrents to HRQoL of the students are all about academic-related. Yasmin et al. (2020) concluded similar findings that academic factors are the most important stressors and emphasized the need for a student-centric teaching techniques and environments. While most of the participants already considered their current technological devices to be adequate enough for online class, still, not everyone has an acceptable specs of gadget for their use. This study found out that those who consider themselves to have adequate technological devices have better perceived mental health status. Asio & Bayucca (2021) ranked the perceived challenges on the delivery of distance learning and found out that internet connection ranks the first, which is arguably taken into account,
by the respondents of this study as part of the technological devices since no separate question was given for it. Availability of gadgets were rank fourth, which all in all described by Cuaton (2020) as a privilege for the few who can afford these technologies. Likewise, as much as the students were adapting to the online delivery of classes, teachers or professors were also part of that adaptation. Supervision in academic outputs clearly relies on the capacity of the teacher to adapt to the technological methods of learning. In this study, those who receive higher levels of supervision from their professors/lecturers have better perceived quality of life and mental health status. The competence and skills of the teacher for online learning delivery were ranked second from the study of Asio & Bayucca (2021) which could be a factor in supervising the students with their outputs. Both the adequacy of technological devices and supervisions on academic output were found out to influence mental health of the respondents. While the experienced intrusions of the students while having class were not thoroughly studied on retrieved literatures, in this study, it was found that it is a predictor of the tensive feeling of the students which all in all may have an effect on their mental health and ultimately their HRQoL.

**Other factors that affect HRQoL**

*COVID-19 Infection*

COVID-19 Infection would fall under the Symptoms variable of Ferrans and colleagues’ HRQoL model which is defined by Ferrans et al. (2005) as “patient’s perception of an abnormal physical, emotional, or cognitive state.” In this study, COVID-19 infection has been found to be a significant predictor of a student’s perception on their personal safety which is also a component of the overall HRQoL. The results showed that majority of the respondents were never clinically diagnosed with COVID-19 and only a few were isolated cases. Feelings of perceived risk to personal
safety is higher for those who have previous COVID-19 infection and/or with household members who were clinically diagnosed with COVID as compared to those with no history of exposure. Being infected by COVID-19 have a significant impact to the HRQoL of a person. Temperoni et al. (2021) found in their study that a significant impact on HRQoL after discharge from the hospital is common among the young to middle aged adults. A cross-sectional, multi-centered study by Alinia et al. (2021) found out that patient who suffered from COVID-19 lost 13.7% of their HRQoL. Similarly, Shah et al. (2021) reported that COVID-19 survivors as well as their partners and family members had their quality of life severely affected as well and there is a need for a holistic support system to be in place.

Activity Levels

This study showed that majority of the respondents engaged in the use of technological devices to conduct leisurely activities such as playing video games, surfing the internet, browsing the social medias, and watching shows. On the other hand, engaging in strenuous physical activities such as going to sports or gym have the lowest engagements. It is also important to take note that the participants mostly engaged in lighter form of physical exercise such as walking, jogging, or biking compared to heavier activities. Results of this study suggests that the higher the reported activity level, the better the physical health of the respondent. According to Sirgy (2012), it was found out that Physical activities such as social activities, physical exercise, volunteering tasks, and religious activities have a positive effect on the QoL of a person. This would support the finding of this study that the activity levels of a person are a significant predictor to their physical health, which is also a component for the overall HRQoL.
General Health Perception

The findings of this study revealed that majority of the respondents had a decreased general health perception during the pandemic as compared to their pre-pandemic health perception. This study suggests that those who have same level of health perception and increased health perception during the pandemic have better quality of life and physical health than those with decreased health perception during the pandemic. Basing on the Ferrans and colleagues’ HRQoL framework, general health perception is the “synthesis of the various aspects of health” and can be strongly influenced by the previous factors such as Biological Function, Symptoms, and Functional Ability (Ferrans et al., 2005). This decreased general health perception among the respondents were as presupposed by the researcher and can also be attributed to the fact that majority of the participants in this study were females, which is supported by the findings from the study of Bermejo-Franco (2022) that female participants showed a worse level of general health perception compared to their male counterparts.
CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

Introductory Restatements
With the COVID-19 pandemic affecting multiple sectors including the academe, everyone could experience difficult situations such as healthcare problems, physical and mental exhaustion, and academic burnout. PT students, being mostly a skill and hands-on based profession, needs to transition to remote learning while coping up with the effects of pandemic that can be physically and mentally taxing. This study seeks to further investigate the impact of the COVID-19 pandemic on the Health-Related Quality of Life (HRQoL) on one of the presumably vulnerable populations – the Physical Therapy Students.

The data were gathered from the 77 participants aged 19-24 that included the 2nd year to 4th year students from DLSMHSI. Significant results were gathered for each component of COV19-QoL scale. The statistical models showed that the overall HRQoL can be affected by place of residence (p<.005), health perception (p<.026), supervision in academic outputs (p<.047), age (p<.027), mood (p<.033), adequacy of technological devices (p<.028), year level (p<.015), family structure (p<.033), activity level (p<.038), sex (p<.006), intrusion experienced while having class (p<.034), and exposure to COVID (p<.005).

Conclusion
This study contributes to the scarce HRQoL studies during the COVID-19 pandemic in the Philippines. Majority of the respondents at 61.04% have greater perceived impact of the pandemic on their quality of life. Those who participated in the study were affected by the pandemic and the different factors at play includes the presence of COVID-19 infection, age, sex, family structure, place of residence, year level, adequacy of technological devices, adequate supervision in academic outputs, intrusions experienced while having class, activity level, health perception, and mood. Capturing these factors is relevant to recognize the negative effects of COVID-19 pandemic to the respondents so as to give
appropriate suggestions and recommendations to address the controllable factors such as technological devices, supervision from faculties, intrusions while having classes, and activity levels. Indeed, COVID-19 made a great impact to the lives of many, including the PT students. Both the public and private sectors, particularly the school administrators and faculties, who deal firsthand with the students, should develop strategies to uphold their student’s HRQoL. Meanwhile, the students themselves should be proactive in seeking help and support from their peers, families, or medical professionals to help in maintaining or improving their HRQoL amidst this pandemic.

**Recommendations**

As to the best of the researcher’s knowledge, this is the first study to utilize the COV19-QoL scale in conjunction with the Ferrans and Colleagues’ HRQoL model in the Philippine setup. Relative to this, further studies are recommended to reinforce the findings of this study. For instance, the questionnaire that was created by the researcher could undergo other methods of validation aside from pretesting. The sample size should also be larger in future studies and expand the reach to other allied health students as well and not just the PT students.

Future studies should also add, modify, or remove question/s to the developed survey tool to fit their study design, objectives, and methodology. For example, the type of work being engaged in by the respondents were not captured and the personality test can be self-reported since the respondents can skip the personality test and just based their personality on the descriptions provided in the choices. Further, this study did not intend to gather a definite proof to the items under the Medical Background, due to ethical reasons as well. The COVID-19 infection to self or to household members and comorbidities were all self-reported without any medical certificate or laboratory results provided as a proof. Also, it is suggested to have a standardized Yes or No question instead throughout the questionnaire or to utilize a 3 or 5-item Likert Scale to homogenize the types of data being gathered. As to research design, a mixed method study design may
have captured most of the needed data to gather explanation on the answers of the respondents. Since this study only captures the HRQoL of the respondents at a moment in time during this pandemic, a different study utilizing a cohort study method may provide better interpretation and comparison of results about the HRQoL of the respondents.
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