



**Faculty of Medicine**  
**University of Dhaka**

**IMPACT OF COVID-19 ON MENTAL HEALTH AND QUALITY OF  
LIFE AMONG THE PHYSIOTHERAPIST IN DHAKA**

**Md. Rifat Al Mamun**

Bachelor of Science in Physiotherapy (B.Sc. PT)

DU Roll no: 803

Reg. no: 6854

Session: 2016-17

BHPI, CRP, Savar, Dhaka-1343



**Bangladesh Health Professions Institute (BHPI)**

Department of Physiotherapy

CRP, Savar, Dhaka -1343

Bangladesh

June 2022

We the undersigned certify that we have carefully read and recommend to the Faculty of Medicine, University of Dhaka, for acceptable this dissertation entitled

**IMPACT OF COVID-19 ON MENTAL HEALTH AND QUALITY OF LIFE AMONG THE PHYSIOTHERAPIST IN DHAKA**

Submitted by **Md. Rifat Al Mamun** for the fulfilment of the requirement for the degree of Bachelor of Science in Physiotherapy (B.Sc. in PT)

.....  
**Mohammad Anwar Hossain**  
Senior Consultant & Head, Department of Physiotherapy, CRP.  
Associate Professor of Physiotherapy Department, BHPI,  
CRP, Savar, Dhaka.  
Supervisor

.....  
**Professor Md. Obaidul Haque**  
Vice Principal  
BHPI, CRP, Savar, Dhaka.

.....  
**Ehsanur Rahman**  
Associate Professor and MPT Coordinator  
Department of Physiotherapy  
BHPI, CRP, Savar, Dhaka.

.....  
**Md. Shofiqul Islam**  
Associate Professor and Head  
Department of Physiotherapy  
BHPI, CRP, Savar, Dhaka

## **Declaration**

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**Name of the Student:**

**Date:** 07 Sep 2022

Md. Rifat Al Mamun

Bachelor of Science in Physiotherapy (B.Sc. in PT)

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## Acknowledgement

First, I would like to express my gratitude to the almighty Allah. When I started the study, I didn't know whether I could complete it or not, but I believed my fortune favors the brave. So, I was determined to try my best to make it successful and I am most grateful to almighty Allah.

After that I must go to my family who inspired me always and provide necessary support. I am immensely grateful to my supervisor, **Mohammad Anwar Hossain**, Senior consultant & head of Physiotherapy Department, CRP, Savar, Dhaka for his guidance, cordial cooperation, support and encouragement during the entire period of the study. I would like to express my deepest gratitude to my honorable teacher **Md. Shofiqul Islam**, Associate professor and head of the Physiotherapy department, BHPI, CRP. I also show my respect to **Muhammad Millat Hossain** Sir, who helped me in taking IRB approval for this study. I also want to show my gratitude to our vice principal **Prof. Md. Obaidul Haque** Sir and **Ehsanur Rahman Sir**, Associate Professor, Department of Physiotherapy, BHPI, CRP.

I would also like to thank **Fajlul Karim Rifat & Tamanna Akter Nipa** for helping me with data collection. I would like to express my gratitude to those physiotherapists who were suffering with COVID-19, who gave me their valuable time and provided the information, related to my study and helped me to make my work successful.

<b>Abbreviation</b>
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<b>BHPI</b>	Bangladesh Health Professions Institute
<b>CRP</b>	Centre for the Rehabilitation of the Paralyzed
<b>IRB</b>	Institutional Review Board
<b>BMRC</b>	Bangladesh Medical Research Council
<b>WHO</b>	World Health Organization
<b>CoPaQ</b>	COVID-19 Pandemic Mental Health Questionnaire
<b>QoL</b>	Quality of Life
<b>COVID-19</b>	Coronavirus Disease 2019
<b>SPSS</b>	Statistical Package for the Social Science

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## Abstract

**Purpose:** To determine the impact of COVID-19 on mental health and quality of life among the physiotherapists in Dhaka. **Objective:** To find out the socio-demographic information, understand the infectious status, find out about the mental health status and find out physiotherapists' quality of life in the COVID-19 pandemic. **Methodology:** It was a cross sectional study. Total 120 participants were attended willingly and conveniently for this study. Data was collected with COVID-19 Pandemic Mental Health Questionnaire (CoPaQ), WHOQOL-BREF questionnaire and Socio-demographic questions. Statistical Package for Social Science (SPSS version 22) was used for data analysis. **Result:** The study was conducted on 120 participants. Participants between 24-31 years was(n=22), between 32-39 years(n=61), between 40-46(n=37), male were (n=65), female was (n=55), (n=108) were graduated, (n=12) were post graduated. COVID-19 Mental Health Impact found significant in Male group, where P value is 0.003, F value is 9.519. The Mean  $\pm$  SE is  $16.75 \pm 1.062$ . overall quality of life found significance on monthly income where chi value is 8.772, P value is 0.048. Hospital admission is also found significance where chi value is 6.992 and P value is 0.03. Physical domain is found significant in vaccination group who vaccinated booster dose where F value is 2.358 and P value is .099. The Mean $\pm$ SE is  $95.102 \pm 0.79339$ . **Conclusion:** This study investigating the impact of COVID-19 on mental and quality of life among the physiotherapist in Dhaka region. The findings of this study indicates that mental health subscales (e.g. Contamination Anxiety, Institutional and Political Trust, Positive Coping, Conspiracy Beliefs) are significantly associated with age group, gender, education, marital status, family members, monthly income, isolation, vaccination etc. Overall quality of life and quality of health is associated with age, family member, monthly income, diagnosis time, isolation and WHOQOL domains are significantly associated with age group (24-31), gender (female), diagnosing time group (April 2020-September 2020), Vaccination group (booster dose).

Key Word: COVID-19, CoPaQ, WHOQOL, Mental Health, Quality of Life

**1.1 Background**

Coronavirus 2 (SARS-CoV-2) is an infectious disease that arose in late 2019 in Wuhan, China, and often manifests as coronavirus illness-2019, a severe acute respiratory disease (COVID-19). The virus moved outside China, and the WHO designated COVID-19 a pandemic on March 11, 2020 (Burch et al., 2020).

The disease's fast spread, spurred in part by asymptomatic carriers and delayed onset of symptoms, posed several hurdles to the healthcare system. By mid-May 2020, the number of cases in the United States had risen to 1.4 million (Hall, 2020).

People's lives, as well as many areas of the global, public, and private economies, have been severely impacted as a result of the quickly changing scenario. Tourism, aviation, agriculture, and the banking industry have all suffered as a result of the COVID-19 pandemic, with governments throughout the world mandating major cutbacks in both supply and demand. Separate lines of study have also found a rise in psychological discomfort among the general public, those with mental illnesses, and healthcare staff (Xiong et al., 2020).

This pandemic catastrophe has drastically altered the working environment, resulting in high-pressure situations and unpleasant and demanding relationships among health care employees. With insufficient PPE, frontline health personnel such as physicians, nurses, trained carers, lab techs, and pharmacists have been providing their best professional services to safeguard human lives. Dealing with extremely contagious customers has caused guilt about potentially infecting their families while attempting to combine life as a healthcare practitioner and a family member. The global COVID-19 epidemic has had a significant psychological impact on health personnel, students, and the general population (Poudel and Subedi, 2020).

Frontline and non-front line healthcare professionals have been demonstrated to be at elevated risk of infection and other negative physical health consequences in previous viral epidemics. Furthermore, during and up to years after epidemics, healthcare personnel reported mental health problems allegedly linked to their employment, including symptoms of post-traumatic stress, exhaustion, despair, and anxiety. Several studies on the mental health of healthcare professionals in the covid-19 epidemic have found that more than one out of every five healthcare employees suffer from anxiety and/or depression, with over two out of five reporting sleeplessness (Muller et al., 2020).

The economical and mental health effects of the COVID-19 pandemic are unparalleled, with worldwide economic loss, travel restrictions, company closures, social distance, isolation and quarantine, and dread of basic necessities shortages (Shuwiekh et al., 2020).

The World Health Organization (WHO) defines mental health as "a state of well-being in which an individual recognizes their abilities to cope with normal life stressors and work competencies in contributing to the belonged community," which is underpinned by six psychological elements: self-acceptance, meaning in life, autonomy, healthy interpersonal relationships, environmental mastery, and personal growth (Mukhtar, 2020).

The constant worry of catching the virus, contracting the virus, losing loved ones to the sickness, and being socially isolated or quarantined are all sources of COVID-related anxiety. These variables can either cause mental health problems in people who have never had them before or intensify symptoms in those who already have them. COVID-19 traumatic stress is a novel sort of traumatic stress that has at least three elements: the persistent threat/fear of getting the virus, economic loss, such as loss of business or employment, and disrupted routines, as well as isolation (Shuwiekh et al., 2020).

Because of the new coronavirus 2019 (COVID-19) pandemic, these mental health and emotional disorders are now among the top public health concerns throughout the world, due to fear of infection or death from the virus. As a result, many people are experiencing increased anxiety, rage, bewilderment, and PTSD symptoms (Pakpour and Griffiths, 2020).

According to studies, spatial separation, self-isolation, quarantine, social and economic strife, and disinformation (especially on social media) are all key contributors to uncommon grief, dread, frustration, helplessness, loneliness, and uneasiness (Ahorsu et al., 2020).

Front-line healthcare workers, such as doctors, nurses, first responders, paramedics, and ambulance personnel, have reported the highest levels of depression and anxiety when compared to low-risk healthcare workers in chest and pulmonology departments, as well as anxiety and fear of contracting COVID-19 due to their increased risk of exposure (Pappa et al., 2020).

They are afraid of infecting their loved ones, especially youngsters and elderly, immunocompromised, or chronically ill family members. Because of the constant fear of contracting an infection that leads to serious illness, healthcare workers in intensive care units, emergency departments, and isolation wards are at a higher risk of developing psychological breakdowns such as severe fatigue, sleep disturbances, health concerns, and fear of contact with COVID-19 patients than those in other healthcare departments (Ho et al., 2020).

Medical personnel who come into direct touch with positive COVID-19 cases are at risk of infection as well as mental stress. To address this, hospitals should provide physical locations for all front-line healthcare professionals to retreat to when the day's job is over. Because healthcare personnel is at high risk of infection, this may help to minimize disease transmission. Counseling and psychotherapy based on stress adaption techniques should be offered by the hospital administration to assist address their psychological issues and satisfy their mental health needs for their mental health (Khan et al., 2020).

Quality of Life (QOL) is the level of well-being felt by a group of people or an individual or, 'the functional impacts of sickness and its treatment upon a patient, as recognized by the patient himself' (Elkholi et al., 2021).

The disease's global reach and the use of traditional disease control methods like quarantine have limited people's mobility. These methods, when combined with imposed

isolation, can have a significant impact on quality of life and contribute to increased anxiety and despair (Bishwajit et al., 2017).

The COVID-19 quarantine was enforced to combat an ambiguous, ongoing threat, which can exacerbate anxiety and exacerbate people's fear of the unknown, lowering their quality of life. People may be afraid for themselves, their relatives, or their friends. Individuals may become panicked as a result of the large amount of information offered by the media and the Internet. Recent research has found that the dread engendered by the COVID-19 pandemic can become chronic and burdensome, and that anxiety, social media exposure, and the risk levels of loved ones, among other things, can predict higher levels of this worry (Mertens et al., 2020).

According to some authors, the increased restrictions on everyday life and social activities for an undetermined period can cause tension and anxiety, as well as a loss of confidence in one's abilities, leading to mental health issues (Wang, Di, Ye and Wei, 2020).

Changes in work-life balance, the threat of losing one's job, which for many seemed all too real under the state of emergency, and anxiety about the future exacerbated by a brewing crisis might all have major consequences for people's mental health. The imposed isolation has also resulted in more confrontations among family members, raising concerns about the prospect of increasing marital violence, child abuse, or custody battles between split parents (Oliveira and Fernandes, 2020).

Elective procedures have been postponed or canceled by several hospitals, and visits to primary care physicians and outpatient specialists have decreased. These shifts can be exceedingly stressful, leading to increased anxiety and a reduction in QOL. As a result, quarantine policies may have a negative psychological influence on people (Ferreira, Pereira, da Fé Brás and Ilchuk, 2021).

## **1.2. Rationale**

The COVID-19 pandemic may have caused various disruptions to people's lives, including uncertainty, disrupted daily routines, financial strains, and social isolation. It may be concerned about getting sick, the duration of the epidemic, if your job will be affected, and what the future holds. The overabundance of information, rumors, and disinformation can make you feel out of control and leave you unsure of what to do. The COVID-19 epidemic is a menace to our people, not only because of the danger it poses to human life and the resulting economic hardship but also because of the mental strain it causes. The biggest economic contraction in modern history has occurred recently, as has a record-breaking increase in unemployment. The worldwide epidemic, aggravated by the financial crisis, will inevitably have a significant influence on society's mental health.

It will go further into and study the impact of the epidemic on mental health in people of all ages. In particular, how the COVID-19 pandemic impacts various people in different ways. The epidemic has impacted our daily lives in several ways. This virus might harm a person's mental health for a variety of reasons. COVID-19 has thrown us off our "normal," putting us in a variety of difficulty settings and forcing us to confront daunting tasks at times. Adapting to a "new normal" has impacted some people more than others and in varied ways. It will go further into and study the impact of the epidemic on mental health in people of all ages. In particular, how the COVID-19 pandemic impacts various people in different ways. The epidemic has impacted our daily lives in several ways. This virus might harm a person's mental health for a variety of reasons. COVID-19 has thrown us off our "normal," putting us in a variety of difficulty settings and forcing us to confront daunting tasks at times. Adapting to a "new normal" has impacted some people more than others and in varied ways. COVID-19 has a significant influence on mental health and quality of life in the present pandemic condition. The ultimate goal is to determine how COVID-19 affects one's mental health and overall quality of life.



### **1.3 Research Question**

- What is the impact of COVID-19 on the physiotherapist who is infected on their mental health and quality of life in the area of Dhaka?

## **1.4 Objectives**

### **1.4.1 General objective**

To determine the impact of COVID-19 on physiotherapists' mental health and quality in Dhaka.

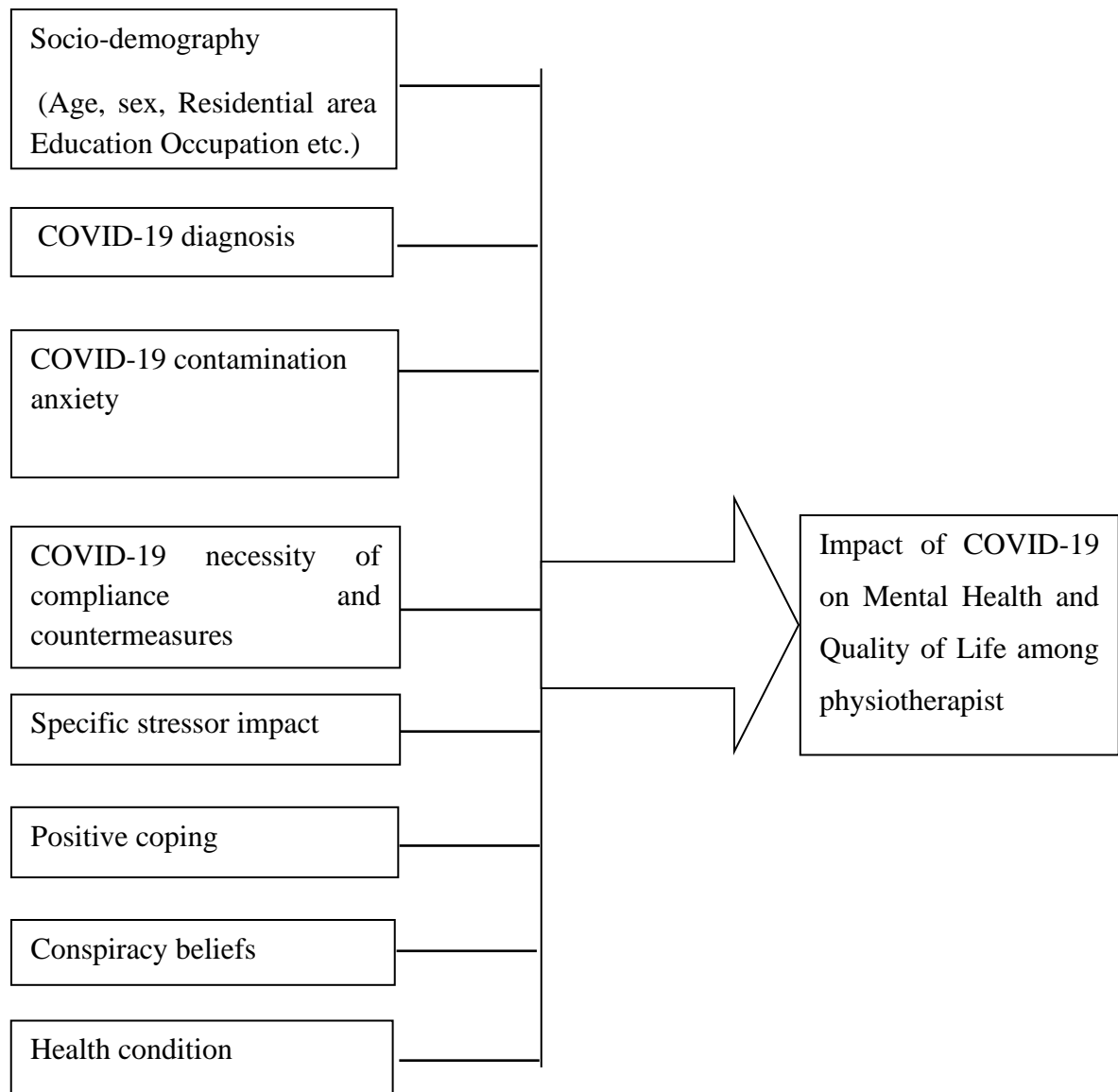
### **1.4.2 Specific objectives**

- To find out the socio-demographic information.
- To find out the infectious status.
- To identify the effects, thoughts, and behavior.
- To find out about the mental health status.
- To find out physiotherapists' quality of life in the COVID-19 pandemic.

## 1.5 Conceptual Framework

Independent Variables

Dependent Variable



**Figure -1: Conceptual framework:**

## **1.6 Operational definition**

**COVID-19:** SARS-CoV-2, a coronavirus that first appeared in December 2019, is the cause of COVID-19. COVID-19 is a dangerous virus that has killed millions of people worldwide and left some with long-term health problems. The coronavirus is contagious. A test is used to identify it. The best approach to protect yourself is to get vaccinated and boosted when you are eligible, to follow testing requirements, wear a mask, wash your hands, and practice physical distance.

**Mental Health:** Mental health is a state of equilibrium, both internally and externally. This equilibrium is influenced by physical, psychological, social, cultural, spiritual, and other linked elements. It also includes psychological health. It influences how we think, feel, and act. It also aids in determining how to deal with stress, interact with others, and make decisions. Mental health is crucial at all stages of life, including childhood, adolescence, and adulthood. Individuals' mental health is the foundation for their well-being and effective functioning. It is more than just the absence of a mental condition; it is the ability to think, learn, and comprehend one's feelings and others' reactions.

**Quality of life:** The general well-being of the population in individuals and societies. The World Health Organization (WHO) defines QOL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and about their goals, expectations, standards, and concerns". Standard indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs, safety, security, and freedom. QOL has a wide range of contexts, including the fields of international development, healthcare, politics, and employment.

**Physiotherapist:** Physiotherapists help people achieve their optimum movement and functional capacity by developing, maintaining, and restoring it. They can assist people at any stage of life when their mobility and function are endangered by age, injuries, diseases, disorders, circumstances, or the environment. Physiotherapists work with patients to improve their physical, psychological, emotional, and social well-being. They operate in the areas of health promotion, prevention, treatment, and rehabilitation.

Physiotherapists are autonomous professionals holding a Bachelor's degree with a one-year compulsory internship (5 years) from a government-recognized university in Bangladesh. Bangladesh Rehabilitation Council Act 2018 entitled physiotherapists as "Practitioners" and declared independent practice. Physiotherapists are entitled "Dr" to write before their names along with an identity that is protected by legal proceedings.

Health Care Providers (HCP)s' experiences during the peak of the COVID-19 epidemic in China have been studied in depth. 73.4 percent of 1,563 Chinese medical staff members who worked during the COVID-19 pandemic experienced stress-related symptoms, 50.7 percent reported depressive symptoms, 44.7 percent expressed anxiety, and 36.1 percent reported sleeplessness. According to Lai et al., (2020), healthcare professionals in Wuhan had greater rates of anxiety, depression, and distress than healthcare professionals in other parts of China. Other research looked into the need for and impact of services provided to healthcare professionals, such as altering shifts to allow for rest. HCP's experiences during the peak of the COVID-19 epidemic in China have been studied in depth. 73.4 percent of 1,563 Chinese medical staff members who worked during the COVID-19 pandemic experienced stress-related symptoms, 50.7 percent reported depressive symptoms, 44.7 percent expressed anxiety, and 36.1 percent reported sleeplessness. 5 According to Lai et al. (2020) healthcare professionals in Wuhan had greater rates of anxiety, depression, and distress than healthcare professionals in other parts of China. Other research looked into the need for and impact of services provided to healthcare professionals, such as altering shifts to allow for rest (Pearman et al., 2020).

According to cross-sectional research, 15% and 20% of participants, respectively, exhibited symptoms of sadness and anxiety. Being a woman, being young, and being alone are all considered risk factors for sadness and anxiety. Furthermore, having a larger home was an additional linked factor for anxiety, as did being a health care worker as an associated factor for depression. Receiving illness information from scientific publications and journals was also shown to be a linked protective factor against depression while having a higher education was found to be a related protective factor for both anxiety and depression. During the COVID-19 epidemic in Iran, the study discovered a significant mental health impact on public health. Females and younger persons are more likely to have mental health difficulties than those with higher

education and those who learn about the condition through scientific papers and journals (Shahriarirad et al., 2021).

Given the poor healthcare systems in Sub-Saharan Africa, COVID-19 might have a huge influence on mental health. COVID-19 is likely to produce anxiety, despair, and post-traumatic stress disorder, similar to the Ebola pandemic of 2014–2016. Mental health services are often underutilized, and communities rely on social resources. As a result, measures to restrict disease transmission must be considered in context. Online mental health treatments are a restricted choice for service delivery due to poor digital literacy, low smartphone adoption, and limited internet connectivity (Semo and Frissa, 2020).

Several recent papers have detailed the COVID-19 pandemic's mental health impact on various target demographics, as well as existing and accepted approaches for preventing and treating these issues/disorders. In the United States, 45 percent of Americans say they are anxious or stressed, and these figures are expected to rise as people continue to physically remove themselves and worry about becoming sick with COVID-19 (Grover and Kennedy Bailey, 2020). Since the outbreak of the pandemic, roughly 33% of people in the UK have reported significant levels of anxiety, while a poll in Italy found posttraumatic stress symptoms (37%) among respondents, as well as tension (21%), severe anxiety (20%), depressive symptoms (17%), and sleeplessness (7%) (Webb, McManus and O'Connor, 2021).

Health Care Employees (HCW), first responders, and other frontline workers in China, the United States, and abroad have experienced substantial clinical depression, anxiety, post-traumatic stress, and suicide thoughts (Liu et al., 2020 and Rossi et al., 2020).

In one Chinese research, 51 percent of healthcare professionals had depression, 45 percent had anxiety, 36 percent had sleeplessness, and 74 percent had post-traumatic stress symptoms (Liu et al., 2020). Front-line health staff caring for COVID-19 patients and those caring for other patients in China had no significant differences in mental health difficulties. Single physicians, nurses, and HCWs working in emergency departments have been reported to have a higher risk of mental health problems in various contexts (Lai et al., 2020 & Ho, Chee and Ho, 2020). Increased workload, lack of

sleep, fear, and prejudice were all shown to be connected with mental health issues among health professionals in Wuhan (Chen et al., 2020). Furthermore, a study done in Singapore and India found a high link between physical symptoms such as headaches, throat discomfort, and fatigue, among health care professionals, and mental health problems/disorders (Chew et al., 2020).

The COVID-19 pandemic in the UK and subsequent lockdown may have affected the mental health of the population. This study examines whether there was an increase in the prevalence and incidence of Common Mental Disorders (CMD) in the UK adult population during the first months of lockdown and whether changes in CMD were associated with stressors related to the pandemic and lockdown. Around 29% of adults without CMD less than a year earlier had a CMD in April 2020. However, by July 2020, the monthly incidence of CMD had reduced to 9%. Most employment, financial and psychological “shocks” were at their highest levels in April and reduced steadily in later months. Despite the lifting of some lockdown conditions by July, stressors related to loneliness, unemployment, financial problems, and domestic work continued to influence CMD (Chandola, Kumari, Booker and Benzeval, 2020).

The COVID-19 pandemic has caused a heavy psychological impact on healthcare professionals especially women and frontline workers. The pooled prevalence of anxiety is 37% from 44 studies, Depression is estimated in 39 studies, and the pooled prevalence of depression is 36%, here are 10 studies reported the prevalence of insomnia, and the overall prevalence of insomnia is 32% (Sun et al., 2021).

Most studies were conducted during the viral epidemic outbreaks (74%). Almost seven out of ten took place in the hospital setting. General HCWs were the most commonly studied group (73%), whereas a minority of studies focused in specific types of HCWs (nurses (15%) and physicians (12%)). Anxiety (62%) and depression (54%) were the mental health conditions most frequently examined, followed by acute stress disorder (33%) and PTSD (31%). The majority followed a cross-sectional design (91%). 84% did use validated instruments to evaluate mental health (Ricci Cabello et al., 2020).



**3.1 Study design**

This study was conducted using a cross-sectional survey under a quantitative study design. Survey methodology was chosen to meet the study aim as an effective way to collect data.

**3.2 Study area**

Data was collected from the Dhaka, Bangladesh

**3.3 Study population**

The physiotherapist who was suffering from COVID-19 was collected using convenience sampling from Dhaka.

**3.4 Method of sampling**

The study here used a convenience sampling technique, considering the inclusion and exclusion criteria.

**3.5 Sampling Technique**

Findings the appropriate number and type of people taking part in the study are called “sampling” (Hicks, 2009). The study was conducted by using the convenience sampling methods due to the time limitation and as it was one of the easiest, cheapest and quicker methods of sample selection. The researcher used this procedure, because, of getting those samples whose criteria were concerned with the study purpose.

### 3.6 Sample size

The sample was a group of subjects selected from the population, who was used in a piece of research (Hicks, 2009). A sample was a smaller group taken from the population. Sometimes the sample size might be big and sometimes it may be small, depending on the population and the characteristics of the study.

When the sample frame is finite,

The equation of finite population correction in the case of a cross-sectional study is:

$$n = \frac{Z^2 pq}{d^2}$$
$$= \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$$
$$= 384$$

Here,

Z (confidence interval) = 1.96

P (prevalence) = 50%

And, q = (1-p)

$$= (1-0.5)$$

$$= 0.5$$

The actual sample size was n = 384.

The actual sample size for this study is calculated as 384, but as the study was performed as a part of an academic research project and there were some limitations. So that 120 COVID-affected physiotherapists were taken as the sample of this study.

### 3.7 Inclusion criteria of the study

- COVID-19 affected person through lab tests.
- Physiotherapist practicing in the study area.
- Both males and females were included.
- Education level minimum Graduation.

### 3.8 Exclusion criteria of the study

- Those who are not interested in participating in this study.
- The physiotherapists are still outside of Dhaka.

### 3.9 Data collection tools

The tools that are needed for the study are-

- Consent paper
- Questionnaire
- COVID-19 Pandemic Mental Health Questionnaire
- WHOQOL Questionnaire
- Paper
- Pen
- File
- Calculator
- Computer
- Printer

### 3.10 Measurement tools

**CoPaQ Questionnaire:** The COVID-19 pandemic has greatly impacted people's lives across a broad spectrum of psychosocial domains. We report the development and psychometric evaluation of the self-report COVID-19 Pandemic Mental Health Questionnaire (CoPaQ), which assesses COVID-19 contamination anxiety, countermeasure necessity and compliance, mental health impact, stressor impact, social media usage, interpersonal conflicts, paranoid ideations, institutional & political trust, conspiracy beliefs, and social cohesion. Further, we illustrate the questionnaire's utility in an applied example investigating if higher SARS-Cov-2 infection rates in psychiatric patients could be explained by reduced compliance with preventive countermeasures (Rek et al., 2021).

**WHOQOL Questionnaire:** Health care is essentially a humanistic transaction where the patient's well-being is a primary aim. By calling for quality of life assessments in health care, attention is focused on this aspect of health, and resulting interventions will pay increased attention to this aspect of patients' well-being. WHO's initiative to develop a quality-of-life assessment arises, therefore, both from a need for a genuinely international measure of quality of life, and restates its commitment to the continued promotion of a

holistic approach to health and health care, as emphasised in the WHO definition of health as “A state of physical, mental and social well-being, not merely the absence of disease and infirmity” (WHOQOL - Measuring Quality of Life| The World Health Organization, 2022).

### **3.11 Data collection procedure**

At the very beginning, the researcher clarified that the participant had the right to refuse to answer any question during completing the questionnaire. They could withdraw from the study at any time. The researcher also clarified to all participants the aim of the study. Participants had ensured that any personal information would not be published anywhere. The researcher took permission from each volunteer participant by using a written consent form. After getting consent from the participants, a standard questionnaire was used to identify the complaints and collect demographic information. Questions were asked according to the Bangla format. For conducting the interview, the researcher conducted a face-to-face or a phone call interview and asked questions. The physical environment was considered strictly. Stimuli that could distract the interviewee were removed to ensure adequate attention to the interview. The interviewee was asked questions alone as much as possible with consent. The researcher built a rapport and clarified questions during the interview. Face-to-face interviews were the most effective way to get the full cooperation of the participant in a survey. Face-to-face interviews were also effective to describe the characteristics of a population. Face-to-face interviews were used to find specific data which describes the population descriptively during discussion. All the data were collected on the researcher's own to avoid errors.

### **3.12 Data Analysis**

Descriptive statistics were used to analyze data. Descriptive statistics refers to methods of describing a set of results in terms of their most interesting characteristics (Hicks, 2009). Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 20.0. The variables were labeled in a list and the researcher established a

computer-based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment, and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. Data were collected on frequency and contingency tables. Measurements of central tendency were carried out using the mean plus standard deviation (SD) for variables. For the study of the association of numeric variables, chi-square tests were used.

Data were analyzed by descriptive statistics and calculated as percentages and presented using tables, bar graphs, pie charts, etc. Microsoft Office Excel 2019 was used to decorate the bar graph and pie charts. The results of this study have consisted of quantitative data. In this study, a lot of information was collected.

To find out the associations of mental health subscale to sociodemographic there was One-way Anova test used. Also to find out the association of quality of life domain to sociodemographic there was One-way Anova test used. To find out the association of overall quality of life and quality of health to sociodemographic there was Chi-square test had used.

**Table-1: Association between mental health subscales and age group**

<b>Sub Scales</b>	<b>Age Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	24-31	65.14 ± 1.811	0.638	0.53
	32-39	66.69 ± 0.945		
	40-46	65.08 ± 1.269		
COVID-19 Contamination Anxiety	24-31	10.45 ± 0.68	3.112	0.048*
	32-39	10.82 ± 0.324		
	40-46	9.43 ± 0.427		
COVID-19 Mental Health Impact	24-31	12.18 ± 1.394	6.1	0.003*
	32-39	13.3 ± 1.022		
	40-46	18.43 ± 1.428		
COVID-19 Specific Stressors Impact	24-31	30.86 ± 1.003	1.272	0.284
	32-39	32.46 ± 0.5		
	40-46	32.38 ± 0.699		
COVID-19 Positive Coping	24-31	17.23 ± 0.577	3.22	0.044*
	32-39	17.1 ± 0.255		
	40-46	16 ± 0.397		
COVID-19 Institutional and Political Trust	24-31	9.27 ± 0.51	2.613	0.078
	32-39	9.39 ± 0.308		
	40-46	10.46 ± 0.415		
COVID-19 Conspiracy Beliefs	24-31	6.59 ± 0.435	4.168	0.018*
	32-39	7.7 ± 0.418		
	40-46	9 ± 0.59		
COVID-19 Social Cohesion	24-31	6.36 ± 0.283	5.249	0.007*
	32-39	7 ± 0.087		
	40-46	7 ± 0.11		

**Table-2: Association between mental health subscales and Gender**

<b>Sub Scales</b>	<b>Gender Group</b>	<b>Mean <math>\pm</math> SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Male	65.54 $\pm$ 0.904	0.328	0.568
	Female	66.35 $\pm$ 1.099		
COVID-19 Contamination Anxiety	Male	9.8 $\pm$ 0.325	5.444	0.021
	Female	10.95 $\pm$ 0.37		
COVID-19 Mental Health Impact	Male	16.75 $\pm$ 1.062	9.519	0.003
	Female	12.22 $\pm$ 0.989		
COVID-19 Specific Stressors Impact	Male	32.29 $\pm$ 0.52	0.183	0.669
	Female	31.96 $\pm$ 0.564		
COVID-19 Positive Coping	Male	16.26 $\pm$ 0.31	7.648	0.007
	Female	17.4 $\pm$ 0.258		
COVID-19 Institutional and Political Trust	Male	10.31 $\pm$ 0.3	9.158	0.003
	Female	8.98 $\pm$ 0.318		
COVID-19 Conspiracy Beliefs	Male	8.55 $\pm$ 0.429	5.892	0.017
	Female	7.13 $\pm$ 0.388		
COVID-19 Social Cohesion	Male	6.98 $\pm$ 0.092	1.975	0.163
	Female	6.76 $\pm$ 0.132		

**Table-3: Association between mental health subscales and Education**

<b>Sub Scales</b>	<b>Education Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Graduation	65.56 ± 0.739	2.187	0.142
	Post	69 ± 2.082		
	Graduate			
COVID-19 Contamination Anxiety	Graduation	10.39 ± 0.275	0.59	0.444
	Post	9.75 ± 0.218		
	Graduate			
COVID-19 Mental Health Impact	Graduation	13.79 ± 0.742	13.655	0.02
	Post	22.67 ± 2.745		
	Graduate			
COVID-19 Specific Stressors Impact	Graduation	31.95 ± 0.409	2.211	0.14
	Post	33.83 ± 0.903		
	Graduate			
COVID-19 Positive Coping	Graduation	16.67 ± 0.231	2.799	0.097
	Post	17.83 ± 0.207		
	Graduate			
COVID-19 Institutional and Political Trust	Graduation	9.54 ± 0.238	4.845	0.03
	Post	11.17 ± 0.575		
	Graduate			
COVID-19 Conspiracy Beliefs	Graduation	7.61 ± 0.307	8.978	0.003
	Post	10.5 ± 0.857		
	Graduate			
COVID-19 Social Cohesion	Graduation	6.87 ± 0.085	0.243	0.623
	Post	7 ± 0.174		
	Graduate			



**Table-4: Association between mental health subscales and Marital Status**

<b>Sub Scales</b>	<b>Marital Status</b>	<b>Mean <math>\pm</math> SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Married	66.32 $\pm$ 0.72	3.231	0.075
	Unmarried	62.17 $\pm$ 2.51		
COVID-19 Contamination Anxiety	Married	10.35 $\pm$ 0.255	0.104	0.748
	Unmarried	10.08 $\pm$ 1.003		
COVID-19 Mental Health Impact	Married	15.01 $\pm$ 0.811	1.76	0.187
	Unmarried	11.67 $\pm$ 1.916		
COVID-19 Specific Stressors Impact	Married	32.46 $\pm$ 0.375	6.702	0.011
	Unmarried	29.25 $\pm$ 1.591		
COVID-19 Positive Coping	Married	16.75 $\pm$ 0.223	0.224	0.637
	Unmarried	17.08 $\pm$ 0.657		
COVID-19 Institutional and Political Trust	Married	9.76 $\pm$ 0.241	0.619	0.433
	Unmarried	9.17 $\pm$ 0.626		
COVID-19 Conspiracy Beliefs	Married	7.98 $\pm$ 0.327	0.667	0.416
	Unmarried	7.17 $\pm$ 0.52		
COVID-19 Social Cohesion	Married	6.96 $\pm$ 0.068	9.913	0.002
	Unmarried	6.17 $\pm$ 0.458		

**Table-5: Association between mental health subscales and Family Members**

<b>Sub Scales</b>	<b>Number of Family Member Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	2	72 ± 0	1.722	0.122
	3	63.75 ± 1.971		
	4	67.04 ± 1.029		
	5	66.81 ± 1.298		
	6	64.13 ± 1.848		
	7	59.5 ± 4.272		
	8	57.67 ± 1.764		
COVID-19 Contamination Anxiety	2	11 ± 0	4.164	0.001
	3	12.38 ± 0.8		
	4	11.2 ± 0.391		
	5	9.88 ± 0.357		
	6	8.06 ± 0.71		
	7	9.75 ± 0.25		
	8	10.67 ± 2.404		
COVID-19 Mental Health Impact	2	23 ± 0	0.6	0.73
	3	13.5 ± 2.909		
	4	13.78 ± 1.297		
	5	15.51 ± 1.317		
	6	16.31 ± 1.932		
	7	12.25 ± 2.658		
	8	11 ± 2.517		
COVID-19 Specific Stressors Impact	2	30 ± 0	0.574	0.75
	3	32.5 ± 0.906		
	4	32 ± 0.523		
	5	32.84 ± 0.718		
	6	31.44 ± 1.225		
	7	30.75 ± 1.652		
	8	29.67 ± 4.096		
COVID-19 Positive Coping	2	18 ± 0	3.866	0.002
	3	18 ± 0.327		
	4	17.4 ± 0.272		
	5	16.86 ± 0.361		
	6	14.94 ± 0.602		
	7	14.75 ± 1.25		
	8	15.33 ± 2.333		
COVID-19 Institutional and Political Trust	2	12 ± 0	1.003	0.427
	3	9.25 ± 0.675		
	4	9.31 ± 0.354		
	5	10.07 ± 0.389		

	6	$10.38 \pm 0.612$		
	7	$8.25 \pm 1.601$		
	8	$9 \pm 2$		
COVID-19 Conspiracy Beliefs	2	$8 \pm 0$	1.258	0.282
	3	$5.25 \pm 1.264$		
	4	$7.76 \pm 0.494$		
	5	$8.49 \pm 0.476$		
	6	$8.25 \pm 0.839$		
	7	$6.75 \pm 1.031$		
	8	$8.33 \pm 2.333$		
COVID-19 Social Cohesion	2	$7 \pm 0$	0.115	0.994
	3	$6.75 \pm 0.25$		
	4	$6.84 \pm 0.11$		
	5	$6.88 \pm 0.153$		
	6	$7 \pm 0.224$		
	7	$7 \pm 0.707$		
	8	$7 \pm 0$		

**Table-6: Association between mental health subscales and Monthly Income**

Sub Scales	Monthly income Group	Mean $\pm$ SE	F	P value
COVID-19 Necessity and compliance with countermeasures	<50000	65.5 $\pm$ 1.483	1.899	0.154
	50K-100k	66.65 $\pm$ 0.757		
	>100K	61.25 $\pm$ 2.737		
COVID-19 Contamination Anxiety	<50000	9.4 $\pm$ 0.493	4.389	0.015
	50K-100k	10.67 $\pm$ 0.28		
	>100K	11.88 $\pm$ 0.875		
COVID-19 Mental Health Impact	<50000	15.4 $\pm$ 1.251	2.084	0.129
	50K-100k	14.9 $\pm$ 1.033		
	>100K	9 $\pm$ 0.779		
COVID-19 Specific Stressors Impact	<50000	31.38 $\pm$ 0.834	3.276	0.041
	50K-100k	32.85 $\pm$ 0.401		
	>100K	29.63 $\pm$ 1.017		
COVID-19 Positive Coping	<50000	15.8 $\pm$ 0.439	6.114	0.003
	50K-100k	17.22 $\pm$ 0.224		
	>100K	17.75 $\pm$ 0.559		
COVID-19 Institutional and Political Trust	<50000	9.85 $\pm$ 0.417	2.067	0.131
	50K-100k	9.81 $\pm$ 0.288		
	>100K	8 $\pm$ 0.327		
COVID-19 Conspiracy Beliefs	<50000	8.25 $\pm$ 0.539	1.251	0.29
	50K-100k	7.89 $\pm$ 0.391		
	>100K	6.25 $\pm$ 0.453		
COVID-19 Social Cohesion	<50000	6.85 $\pm$ 0.166	0.493	0.612
	50K-100k	6.93 $\pm$ 0.089		
	>100K	6.63 $\pm$ 0.263		

**Table-7: Association between mental health subscales and When Diagnose the COVID-19**

<b>Sub Scales</b>	<b>Diagnosis time Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	April 2020-September 2020	70.75 ± 1.237	2.625	0.054
	October 2020-March 2021	65.2 ± 1.511		
	April 2021-September 2021	65.03 ± 0.939		
	October 2021-March 2022	66.43 ± 2.724		
COVID-19 Contamination Anxiety	April 2020-September 2020	10.44 ± 0.398	1.636	0.185
	October 2020-March 2021	10.6 ± 0.577		
	April 2021-September 2021	10.01 ± 0.338		
	October 2021-March 2022	12.29 ± 0.808		
COVID-19 Mental Health Impact	April 2020-September 2020	14.88 ± 1.857	0.736	0.533
	October 2020-March 2021	16.16 ± 1.802		
	April 2021-September 2021	14.47 ± 0.972		
	October 2021-March 2022	11 ± 3.273		
COVID-19 Specific Stressors Impact	April 2020-September 2020	33.88 ± 0.724	1.106	0.35
	October 2020-March 2021	31.64 ± 0.973		
	April 2021-September 2021	31.97 ± 0.499		
	October 2021-March 2022	31.71 ± 1.085		
COVID-19 Positive Coping	April 2020-September 2020	17.44 ± 0.387	2.159	0.097
	October 2020-March 2021	17.2 ± 0.476		
	April 2021-September 2021	16.38 ± 0.288		
	October 2021-March 2022	18 ± 0.378		
COVID-19 Institutional	April 2020-September	9.94 ± 0.629	0.597	0.618

and Political Trust	2020			
	October 2020-March 2021	9.92 ± 0.454		
	April 2021-September 2021	9.68 ± 0.297		
	October 2021-March 2022	8.57 ± 1.043		
COVID-19 Conspiracy Beliefs	April 2020-September 2020	8.13 ± 0.632	1.272	0.287
	October 2020-March 2021	7.96 ± 0.665		
	April 2021-September 2021	8.06 ± 0.391		
	October 2021-March 2022	5.57 ± 1.478		
COVID-19 Social Cohesion	April 2020-September 2020	7 ± 0.129	1.035	0.38
	October 2020-March 2021	6.64 ± 0.257		
	April 2021-September 2021	6.96 ± 0.089		
	October 2021-March 2022	6.71 ± 0.184		

**Table-8: Association between mental health subscales and Isolation**

<b>Sub Scales</b>	<b>Isolation Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	1	64.5 ± 3.862	0.437	0.727
	2	65.67 ± 0.818		
	3	66.56 ± 2.545		
	4	64.5 ± 3.862		
COVID-19 Contamination Anxiety	1	12.43 ± 1.02	3.933	0.01
	2	10.33 ± 0.284		
	3	8.63 ± 0.632		
	4	11 ± 0.408		
COVID-19 Mental Health Impact	1	8.86 ± 0.962	2.474	0.065
	2	14.65 ± 0.946		
	3	18.81 ± 1.711		
	4	15.75 ± 4.802		
COVID-19 Specific Stressors Impact	1	33.14 ± 1.122	0.514	0.674
	2	32.2 ± 0.454		
	3	31.13 ± 1.414		
	4	33.25 ± 1.031		
COVID-19 Positive Coping	1	18.43 ± 0.297	3.41	0.02
	2	16.88 ± 0.233		
	3	15.38 ± 0.752		
	4	17.25 ± 1.493		
COVID-19 Institutional and Political Trust	1	8.43 ± 0.612	5.899	0.001
	2	9.45 ± 0.272		
	3	11.94 ± 0.403		
	4	10.5 ± 1.323		
COVID-19 Conspiracy Beliefs	1	5.43 ± 1.043	4.648	0.004
	2	7.81 ± 0.344		
	3	10.31 ± 0.805		
	4	9 ± 1.472		
COVID-19 Social Cohesion	1	7 ± 0	0.146	0.932
	2	6.88 ± 0.104		
	3	7 ± 0.158		
	4	6.75 ± 0.479		

**Table-9: Association between mental health subscales and Hospital Admission**

<b>Sub Scales</b>	<b>Admitted to Hospital Group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Yes	59 ± 0	0.801	0.373
	No	65.91 ± 0.707		
COVID-19 Contamination Anxiety	Yes	5 ± 0	3.905	0.05
	No	10.3 ± 0.249		
COVID-19 Mental Health Impact	Yes	17 ± 0	0.088	0.767
	No	14.53 ± 0.761		
COVID-19 Specific Stressors Impact	Yes	22 ± 0	6.163	0.014
	No	32.19 ± 0.376		
COVID-19 Positive Coping	Yes	11 ± 0	6.567	0.012
	No	16.83 ± 0.209		
COVID-19 Institutional and Political Trust	Yes	13 ± 0	1.829	0.179
	No	9.65 ± 0.227		
COVID-19 Conspiracy Beliefs	Yes	13 ± 0	2.554	0.113
	No	7.81 ± 0.297		
COVID-19 Social Cohesion	Yes	7 ± 0	0.022	0.884
	No	6.87 ± 0.079		



**Table-10: Association between mental health subscales and Vaccination**

<b>Sub Scales</b>	<b>Vaccination group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Yes, 1 dose	65.33 ± 8.838	2.038	0.135
	Yes, 2 dose	64.72 ± 0.956		
	Yes, Booster dose	67.59 ± 0.952		
COVID-19 Contamination Anxiety	Yes, 1 dose	9.33 ± 0.333	1.556	0.215
	Yes, 2 dose	10 ± 0.381		
	Yes, Booster dose	10.84 ± 0.294		
COVID-19 Mental Health Impact	Yes, 1 dose	16.33 ± 7.535	0.244	0.784
	Yes, 2 dose	14.24 ± 0.969		
	Yes, Booster dose	15.18 ± 1.231		
COVID-19 Specific Stressors Impact	Yes, 1 dose	31.67 ± 2.028	2.046	0.134
	Yes, 2 dose	31.5 ± 0.579		
	Yes, Booster dose	33.06 ± 0.438		
COVID-19 Positive Coping	Yes, 1 dose	16.67 ± 1.856	4.123	0.019
	Yes, 2 dose	16.28 ± 0.323		
	Yes, Booster dose	17.49 ± 0.202		
	Total	16.78 ± 0.211		
COVID-19 Institutional and Political Trust	Yes, 1 dose	8.67 ± 2.603	0.467	0.628
	Yes, 2 dose	9.6 ± 0.297		
	Yes, Booster dose	9.9 ± 0.344		
COVID-19 Conspiracy Beliefs	Yes, 1 dose	7 ± 3.055	0.544	0.582
	Yes, 2 dose	8.16 ± 0.387		
	Yes, Booster dose	7.59 ± 0.472		
COVID-19 Social Cohesion	Yes, 1 dose	6.67 ± 0.333	0.235	0.791
	Yes, 2 dose	6.85 ± 0.113		
	Yes, Booster dose	6.94 ± 0.111		

**Table-11: Association between mental health subscales and Someone Close Infected**

<b>Sub Scales</b>	<b>Someone close infected group</b>	<b>Mean ± SE</b>	<b>F</b>	<b>P value</b>
COVID-19 Necessity and compliance with countermeasures	Yes	65.61 ± 0.786	0.939	0.334
	No	67.47 ± 1.444		
COVID-19 Contamination Anxiety	Yes	10.12 ± 0.282	3.724	0.056
	No	11.42 ± 0.414		
COVID-19 Mental Health Impact	Yes	14.69 ± 0.813	0.003	0.956
	No	14.58 ± 2.12		
COVID-19 Specific Stressors Impact	Yes	32.03 ± 0.43	0.457	0.501
	No	32.74 ± 0.764		
COVID-19 Positive Coping	Yes	16.55 ± 0.239	6.561	0.012
	No	18 ± 0.276		
COVID-19 Institutional and Political Trust	Yes	9.71 ± 0.245	0.017	0.896
	No	9.63 ± 0.588		
COVID-19 Conspiracy Beliefs	Yes	7.95 ± 0.331	0.151	0.699
	No	7.63 ± 0.693		
COVID-19 Social Cohesion	Yes	6.86 ± 0.09	0.412	0.522
	No	7 ± 0.132		

**Table-12: Association of subscales (Pearson Correlations test)**

	<b>COVID-19 Necessity and compliance with countermeasures</b>	<b>COVID-19 Contamination Anxiety</b>	<b>COVID-19 Mental Health Impact</b>	<b>COVID-19 Specific Stressors Impact</b>	<b>COVID-19 Positive Coping</b>	<b>COVID-19 Institutional and Political Trust</b>	<b>COVID-19 Conspiracy Beliefs</b>	<b>COVID-19 Social Cohesion</b>
<b>COVID-19 Necessity and compliance with countermeasures</b>	1							
<b>COVID-19 Contamination Anxiety</b>	.310**	1						
<b>COVID-19 Mental Health Impact</b>	.398**	-.274**	1					
<b>COVID-19 Specific Stressors Impact</b>	.539**	.444**	.246*	1				
<b>COVID-19 Positive Coping</b>	.379**	.650**	-0.073	.522*	1			
<b>COVID-19 Institutional and Political Trust</b>	.404**	-.297**	.776*	0.103	-0.141	1		
<b>COVID-19 Conspiracy Beliefs</b>	.204*	-.432**	.779*	-0.04	-.224*	.746**	1	

<b>y Beliefs</b>								
<b>COVID-19 Social Cohesion</b>	.340**	0.038	.305* *	.311* *	0.072	.260**	.288**	1

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

**\* Correlation is significant at the 0.05 level (2-tailed).**

**Table-13: Association between variables and overall quality of life**

<b>Variables</b>	<b>Overall Quality of life</b>	<b>Chi value</b>	<b>P value</b>
Age		7.014	0.135
Gender		2.826	0.243
Education		0.588	0.745
Marital Status		0.588	0.745
Family member		18.374	0.105
Monthly income		8.722	0.048*
Diagnosis time		5.947	0.429
Isolation		7.296	0.294
Hospital admission		6.992	0.03*
Vaccination status		9.178	0.057
Someone Close infected		0.688	0.709

**Table-14: Association between variables and overall quality of health**

<b>Variables</b>	<b>Overall Quality of health</b>	<b>Chi value</b>	<b>P value</b>
Age		10.028	0.04*
Gender		4.061	0.131
Education		4.444	0.108
Marital Status		2.405	0.3
Family member		23.43	0.024*
Monthly income		9.167	0.057
Diagnosis time		14.517	0.024*
Isolation		15.918	0.014*
Hospital admission		0.34	0.844
Vaccination status		7.829	0.098
Someone Close infected		4.976	0.083

**Table-15: Association between WHOQOL domains and age group**

<b>WHOQOL Domains</b>	<b>Age Group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	24-31	93.6364 ± 1.33314	0.265	0.768
	32-39	93.5082 ± 0.76058		
	40-46	94.3784 ± 0.89657		
Psychological	24-31	87.4545 ± 1.92132	4.258	0.016*
	32-39	82.5574 ± 0.94451		
	40-46	81.2973 ± 1.41255		
Social Relationship	24-31	46.9091 ± 1.44586	3.55	0.032*
	32-39	43.541 ± 0.6684		
	40-46	43.2432 ± 0.87457		
Environmental	24-31	126.5455 ± 3.96124	7.598	0.001***
	32-39	115.2131 ± 1.49263		
	40-46	113.0811 ± 2.08324		

**Table-16: Association between WHOQOL domains and gender group**

<b>WHOQOL Domains</b>	<b>Gender Group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	Male	93.6 ± 0.72218	0.166	0.684
	Female	94.0364 ± 0.78965		
Psychological	Male	81.6 ± 1.06987	4.569	0.035*
	Female	84.8 ± 1.02442		
Social Relationship	Male	43.8769 ± 0.67351	0.157	0.693
	Female	44.2909 ± 0.80974		
Environmental	Male	115.3846 ± 1.68302	1.1	0.296
	Female	118.1091 ± 2.00432		

**Table-17: Association between WHOQOL domains and education group**

<b>WHOQOL Domains</b>	<b>Education Group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	Graduate	94.0741 ± 0.56304	2.426	0.122
	Post Graduate	91.3333 ± 1.46336		
Psychological	Graduate	83.7037 ± 0.77643	6.677	0.011*
	Post Graduate	77.3333 ± 2.42878		
Social Relationship	Graduate	44.2222 ± 0.5639	0.809	0.37
	Post Graduate	42.6667 ± 1.02494		
Environmental	Graduate	117.037 ± 1.39362	0.874	0.352
	Post Graduate	113 ± 3.15748		

**Table-18: Association between WHOQOL domains and marital status group**

<b>WHOQOL Domains</b>	<b>Marital Status group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	Married	94.0741 ± 0.54045	2.426	0.122
	Unmarried	91.3333 ± 2.07924		
Psychological	Married	82.9259 ± 0.78159	0.309	0.579
	Unmarried	84.3333 ± 2.89025		
Social Relationship	Married	43.7778 ± 0.53622	2.837	0.095
	Unmarried	46.6667 ± 1.79787		
Environmental	Married	115.8148 ± 1.27753	3.678	0.058
	Unmarried	124 ± 5.74192		

**Table-19: Association between WHOQOL domains and family members group**

<b>WHOQOL Domains</b>	<b>Family Members group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	2	96 ± 0	0.828	0.551
	3	94 ± 1.85164		
	4	94.6667 ± 0.76277		
	5	93.7674 ± 0.87593		
	6	91.5 ± 2.09364		
	7	91 ± 1.91485		
	8	96 ± 2.3094		
	Psychological	2		
3		79.5 ± 3.33274		
4		82.4 ± 1.06667		
5		84.3721 ± 1.36278		
6		83.5 ± 2.39096		
7		81 ± 2.51661		
8		80 ± 4		
Social Relationship		2	52 ± 0	0.928
	3	45 ± 1.81265		
	4	42.9333 ± 0.80804		
	5	45.1163 ± 0.9443		
	6	43.5 ± 1.40831		
	7	44 ± 2.3094		
	8	44 ± 2.3094		
	Environmental	2	140 ± 0	
3		120 ± 4.40779		
4		112.5333 ± 2.0404		
5		120.093 ± 2.34174		
6		117.25 ± 3.21908		
7		113 ± 3.41565		
8		113.3333 ± 3.52767		



**Table-20: Association between WHOQOL domains and monthly income group**

<b>WHOQOL Domains</b>	<b>Monthly Income group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	<50000	93.8 ± 0.89385	1.03	0.36
	50K-100k	94.1111 ± 0.71195		
	>100K	91 ± 1.46385		
Psychological	<50000	83 ± 1.34164	0.003	0.997
	50K-100k	83.1111 ± 1.00771		
	>100K	83 ± 1.81265		
Social Relationship	<50000	44.8 ± 1.07369	1.17	0.314
	50K-100k	43.9444 ± 0.60511		
	>100K	41.5 ± 1.2956		
Environmental	<50000	116.8 ± 2.26998	1.447	0.239
	50K-100k	117.4444 ± 1.69563		
	>100K	108.5 ± 3.33274		

**Table-21: Association between WHOQOL domains and diagnosis time group**

<b>WHOQOL Domains</b>	<b>Diagnosis time group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	April 2020-September 2020	95.5 ± 1.20416	1.027	0.383
	October 2020-March 2021	93.76 ± 1.34818		
	April 2021-September 2021	93.2222 ± 0.64587		
	October 2021-March 2022	96 ± 2.89499		
Psychological	April 2020-September 2020	90.75 ± 1.4477	7.639	0.002**
	October 2020-March 2021	82.4 ± 2.01329		
	April 2021-September 2021	82.2778 ± 0.85517		
	October 2021-March 2022	76 ± 1.9518		
Social Relationship	April 2020-September 2020	48.75 ± 1.5152	4.808	0.003**
	October 2020-March 2021	44 ± 1.1547		
	April 2021-September 2021	43.2222 ± 0.62116		
	October 2021-March 2022	42.2857 ± 1.47542		

2022				
Environmental	April 2020-September 2020	126.25 ± 4.17882	3.141	0.028*
	October 2020-March 2021	116.64 ± 3.4229		
	April 2021-September 2021	114.8333 ± 1.45337		
	October 2021-March 2022	113.1429 ± 1.68224		

**Table-22: Association between WHOQOL domains and isolation group**

WHOQOL Domains	Isolation group	Mean ± SE	F Value	P Value
Physical	7 days	96 ± 1.51186	1.181	0.32
	14 days	93.4118 ± 0.60142		
	21 days	94 ± 1.75119		
	28 days	98 ± 3.82971		
Psychological	7 days	81.7143 ± 2.44671	0.139	0.937
	14 days	83.3882 ± 0.81583		
	21 days	83.25 ± 2.97139		
	28 days	85 ± 7.18795		
Social Relationship	7 days	45.7143 ± 1.92372	2.161	0.097
	14 days	43.4824 ± 0.58664		
	21 days	45.25 ± 1.62147		
	28 days	50 ± 4.76095		
Environmental	7 days	113.1429 ± 5.36048	1.776	0.156
	14 days	115.7176 ± 1.47402		
	21 days	121 ± 3.89016		
	28 days	129 ± 10.63015		

**Table-23: Association between WHOQOL domains and hospital admission group**

<b>WHOQOL Domains</b>	<b>Hospital admission Group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	Yes	88 ± 0	1.02	0.315
	No	93.8983 ± 0.53548		
Psychological	Yes	76 ± 0	0.773	0.381
	No	83.2542 ± 0.75656		
Social Relationship	Yes	40 ± 0	0.511	0.476
	No	44.1017 ± 0.52621		
Environmental	Yes	108 ± 0	0.38	0.539
	No	116.8136 ± 1.31015		

**Table-24: Association between WHOQOL domains and vaccination group**

<b>WHOQOL Domains</b>	<b>Vaccination Group</b>	<b>Mean ± SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	1 dose	90.6667 ± 5.81187	2.358	0.099*
	2 doses	93 ± 0.693		
	Booster dose	95.102 ± 0.79339		
Psychological	1 dose	76 ± 10.06645	1.337	0.267
	2 doses	82.8235 ± 0.98473		
	Booster dose	83.8367 ± 1.12461		
Social Relationship	1 dose	45.3333 ± 3.52767	0.186	0.831
	2 doses	43.8235 ± 0.66749		
	Booster dose	44.3265 ± 0.85585		
Environmental	1 dose	118.6667 ± 10.66667	0.474	0.624
	2 doses	115.5294 ± 1.61757		
	Booster dose	118.0408 ± 2.17632		

**Table-25: Association between WHOQOL domains and someone close infected group**

<b>WHOQOL Domains</b>	<b>Someone Close Infected Group</b>	<b>Mean <math>\pm</math> SE</b>	<b>F Value</b>	<b>P Value</b>
Physical	Yes	93.6634 $\pm$ 0.572	0.35	0.555
	No	94.5263 $\pm$ 1.44159		
Psychological	Yes	83.0891 $\pm$ 0.79976	0.005	0.946
	No	82.9474 $\pm$ 2.24452		
Social Relationship	Yes	44.198 $\pm$ 0.58327	0.339	0.561
	No	43.3684 $\pm$ 1.07118		
Environmental	Yes	117.3069 $\pm$ 1.38691	1.444	0.232
	No	113.0526 $\pm$ 3.51228		

### **3.13 Inform consent**

Verbal and written informed consent was taken from every person. And ensure every person that they can leave at any time during data collection, & it was ensured that participants were not influenced by data collectors. The researcher strictly maintained the confidentiality regarding participant's condition. The study was conducted cleanly and systematically. Every subject had the opportunity to discuss their problem with the senior authority and have any questioned answer to their satisfaction.

### **3.14 Ethical considerations**

The proposal of the dissertation including the methodology was presented to the Institutional Review Board (IRB) of the Bangladesh Health Professions Institute (BHPI). Again before the beginning of the data collection, Ethical permission was taken from IRB to conduct the study. The whole process of this research project was done by following the Bangladesh Medical Research Council (BMRC) guidelines and World Health Organization (WHO) Research guidelines.

**Table-26: Socio-demographic Information**

	<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
Age	24-31	22	18.3
	32-39	61	50.8
	40-46	37	30.8
Gender	Male	65	54.2
	Female	55	45.8
Education	Graduate	108	90
	Post Graduate	12	10
Marital Status	Married	108	90
	Unmarried	12	10
Family Members	2	1	0.8
	3	8	6.7
	4	45	37.5
	5	43	35.8
	6	16	13.3
	7	4	3.3
	8	3	2.5
COVID Diagnosis time	April 2020- September 2020	16	13.3
	October 2020- March 2021	25	20.8
	April 2021- September 2021	72	60
	October 2021- March 2022	7	5.8
Admitted to Hospital	Yes	5	0.8
	No	115	98.3
Vaccination Status	1 dose	3	2.5
	2 doses	68	56.7
	Booster dose	49	40.8
Someone close infected	Yes	101	84.2
	No	19	15.8
Monthly Income	Below 50000	40	33.3
	50000-100000	72	60
	100000-150000	8	6.7
Isolation	2-7D	7	5.8
	8-14D	85	70.8
	15-21D	16	13.3
	22-30D	4	3.3

### **From Table-26 Sociodemographic information of the participants**

The study was conducted on 120 participants. Participants between 24-31 years was (n=22), participants between 32-39 years were (n=61), participants between 40-46 was (n=37).

Among 120 participants male were (n=65), female was (n=55).

Among 120 participants (n=108) were graduated, (n=12) were post graduated.

Among 120 participants (n=108) were married, (n=12) were unmarried.

Among 120 participants, number of family members 2 were in (n=1), 3 family members were in (n=8), 4 family members were in (n=45), 5 family members were in (n=43), 6 family members were in (n=16), 7 family members were in (n=4), 8 family members were in (n= 3).

Among 120 participants, (n=16) were diagnosed COV positive in between April 2020-september 2020, (n=25) were diagnosed COV positive in between October 2020-March 2021, (n=72) were diagnosed COV positive in between April 2021- September 2021, (n=7) were diagnosed COV positive in between October 2021-March 2022

Among 120 participants (n= 5) were admitted to hospital, (n=115) were not admitted to hospital.

Among 120 participants, (n=49) have vaccinated by Booster dose, (n=68) have vaccinated by 2<sup>nd</sup> dose, (n=3) have vaccinated by 1<sup>st</sup> dose.

Among 120 participants (n= 101) have someone close infected, (n=19) don't have someone close infected.

Among 120 participants (n=40) have monthly income below 50000, (n=72) have monthly income between 50000-100000, (n=8) have monthly income above 100000-150000.

Among 120 participants (n=7) were isolated for 2-7 days, (n=85) were isolated for 8=14 days, (n=16) were isolated for 15-21 days, (n=4) were isolated for 22-30 days.

### **From Table-1 Association between mental health subscales and age group**

Above table COVID- 19 Contamination Anxiety found significant in 32-39 age group where P value is 0.048, F value is 6.1. The Mean  $\pm$  SE value is  $10.82 \pm 0.324$ .

COVID -19 Mental Health Impact found significant in 40-46 age group, where P value is 0.003, F value is 6.1. The Mean  $\pm$  SE is  $18.43 \pm 1.428$ .

COVID-19 Positive Coping found significant in 24-31 age group where P value is 0.044, F value is 3.22. The Mean  $\pm$  SE is  $17.23 \pm 0.577$ .

COVID-19 Conspiracy Beliefs found significant in 32-39 age group, where P value is 0.018, F value is 4.168. The Mean  $\pm$  SE is  $7.7 \pm 0.418$ .

COVID-19 Social Cohesion found significant in 32-39 age group, where P value is 0.007, F value is 5.249. The Mean  $\pm$  SE is  $7 \pm 0.087$ .

### **From table-2 Association between mental health subscales and Gender**

Above table COVID-19 Contamination Anxiety found significant in female group, where P value is 0.021, F Value is 5.444. The Mean  $\pm$  SE is  $10.95 \pm 0.37$ .

COVID-19 Mental Health Impact found significant in Male group, where P value is 0.003, F value is 9.519. The Mean  $\pm$  SE is  $16.75 \pm 1.062$ .

COVID-19 Positive Coping found significant in female group, where P value is 0.007, F Value is 7.648. The Mean  $\pm$  SE is  $17.4 \pm 0.258$ .

COVID-19 Institutional and Political Trust found significant in male group, where P value is 0.003, F Value is 9.158 The Mean  $\pm$  SE is  $10.31 \pm 0.3$ .

COVID-19 Conspiracy Beliefs found significant in male group, where P value is 0.017, F Value is 5.892 The Mean  $\pm$  SE is  $8.55 \pm 0.429$ .



### **From table-3 Association between mental health subscales and Education**

Above table COVID-19 Mental Health Impact found significant in post- graduation group, where P value is 0, F Value is 13.655 The Mean  $\pm$  SE is  $22.67 \pm 2.745$ .

COVID-19 Positive Coping found significant in post- graduation group, where P value is 0.097, F Value is 2.799 The Mean  $\pm$  SE is  $17.83 \pm 0.207$ .

COVID-19 Institutional and Political Trust found significant in post- graduation group, where P value is 0.03, F Value is 4.845 The Mean  $\pm$  SE is  $11.17 \pm 0.575$ .

COVID-19 Conspiracy Beliefs found significant in post- graduation group, where P value is 0.003, F Value is 8.978 The Mean  $\pm$  SE is  $10.5 \pm 0.857$ .

### **From table-4 Association between mental health subscales and Marital Status**

Above table COVID-19 Necessity and compliance with countermeasures found significant in Married group, where P value is 0.075 F value is 3.231. The Mean  $\pm$  SE is  $66.32 \pm 0.72$ .

COVID-19 Specific Stressors Impact found significant in Married group, where P value is 0.011 F value is 6.702. The Mean  $\pm$  SE is  $32.46 \pm 0.375$  (95%CI: 33.21-31.72).

COVID-19 Social Cohesion found significant in Married group, where P value is 0.002 F value is 9.913. The Mean  $\pm$  SE is  $6.96 \pm 0.068$ .

### **From table-5 Association between mental health subscales and Family Members**

Above table COVID-19 Contamination Anxiety found significant in 3 number of family member group, where P value is 0.001, F value is 4.164. The Mean  $\pm$  SE is  $12.38 \pm 0.8$ .

COVID-19 Positive Coping found significant in 3 number of family member group, where P value is 0.002, F value is 3.866. The Mean  $\pm$  SE is  $18 \pm 0.327$ .

**From table-6 Association between mental health subscales and Monthly Income**

Above table COVID-19 Contamination Anxiety found significant in >100K Monthly income group, where P value is 0.015, F value is 4.389. The Mean  $\pm$  SE is  $11.88 \pm 0.875$

COVID-19 Specific Stressors Impact found significant in 50K-100k Monthly income group, where P value is 0.041, F value is 3.276. The Mean  $\pm$  SE is  $32.85 \pm 0.401$ .

COVID-19 Positive Coping found significant in >100k Monthly income group, where P value is 0.003, F value is 6.114. The Mean  $\pm$  SE is  $17.75 \pm 0.559$ .

**From table-7 Association between mental health subscales and When Diagnose the COVID-19**

Above table COVID-19 Necessity and compliance with countermeasures found significant in April 2020-September 2020 diagnosis time group, where P value is 0.054, F value is 2.625. The Mean  $\pm$  SE is  $70.75 \pm 1.237$ .

COVID-19 Positive Coping found significant in October 2021-March 2022, where P value is 0.097, F value is 2.159. The Mean  $\pm$  SE is  $18 \pm 0.378$ .

**From table-8 Association between mental health subscales and Isolation**

Above table COVID-19 Contamination Anxiety found significant in 1 no. Isolation group where P value is 0.01 and F value is 3.933. The Mean  $\pm$  SE is  $12.43 \pm 1.02$ .

COVID-19 Positive Coping found significant in 1 no. Isolation group where P value is 0.02 and F value is 3.41. The Mean  $\pm$  SE is  $18.43 \pm 0.297$ .

COVID-19 Institutional and Political Trust found significant in 3 no. Isolation group where P value is 0.01 and F value is 5.899. The Mean  $\pm$  SE is  $11.94 \pm 0.403$

COVID-19 Conspiracy Beliefs found significant in 3 no. Isolation group where P value is 0.004 and F value is 4.648. The Mean  $\pm$  SE is  $10.31 \pm 0.805$ .

**From table-9 Association between mental health subscales and Hospital Admission**

Above table COVID-19 Contamination Anxiety found significant in not admitted to hospital group, where P value is 0.05 F value is 3.905. The Mean  $\pm$  SE is  $10.3 \pm 0.249$ .

COVID-19 Specific Stressors Impact found significant in not admitted to hospital group, where P value is 0.014 F value is 6.163. The Mean  $\pm$  SE is  $32.19 \pm 0.376$ .

COVID-19 Positive Coping found significant in not admitted to hospital group, where P value is 0.012 F value is 6.567. The Mean  $\pm$  SE is  $16.83 \pm 0.209$ .

**From table-10 Association between mental health subscales and Vaccination**

Above table COVID-19 Positive Coping found significant in Booster dose vaccinated group where P value is 0.019 F value is 4.123. The Mean  $\pm$  SE is  $17.49 \pm 0.202$ .

**From table-11 Association between mental health subscales and Someone Infected**

Above table COVID-19 Positive Coping found significant in NO group of someone close infected group, where P value is 0.012, F value is 6.561. The Mean  $\pm$  SE is  $18 \pm 0.276$ .

**From Table-13: Association between variables and overall quality of life**

Above table overall quality of life found significance on monthly income where chi value is 8.772, P value is 0.048. Hospital admission is also found significance where chi value is 6.992 and P value is 0.03.

**From Table-14: Association between variables and overall quality of health**

Above table overall quality of health found significance on age where chi value is 10.028, P value is 0.04. Family member is found significance where chi value is 23.43 and P value is 0.3. Isolation is found significance where chi value is 15.918 and P value is 0.014. Diagnosis time is found significance where chi value is 14.517 and P value is 0.024.

**From Table-15: Association between WHOQOL domains and age group**

Above table Psychological domain is found significant in age group 24-31 where F value is 4.258 and P value is 0.016. The Mean $\pm$ SE is 87.4545  $\pm$  1.92132.

Social Relationship domain is found significant in age group 24-31 where F value is 3.55 and P value is 0.032. The Mean $\pm$ SE is 46.9091  $\pm$  1.44586.

Environmental domain is found significant in age group 24-31 where F value is 7.598 and P value is 0.001. The Mean $\pm$ SE is 126.5455  $\pm$  3.96124.

**From Table-16: Association between WHOQOL domains and gender group**

Above table Psychological domain is found significant in gender group female where F value is 4.569 and P value is 0.035. The Mean $\pm$ SE is 84.8  $\pm$  1.02442.

**From Table-17: Association between WHOQOL domains and education group**

Above table Psychological domain is found significant in education group graduate where F value is 6.677 and P value is 0.011. The Mean $\pm$ SE is 83.7037  $\pm$  0.77643.

**From Table-21: Association between WHOQOL domains and diagnosis time group**

Above table Psychological domain is found significant in diagnosis time group April 2020-September 2020 where F value is 7.639 and P value is 0.002. The Mean±SE is  $90.75 \pm 1.4477$ .

Social Relationship domain is found significant in diagnosis time group April 2020-September 2020 where F value is 4.808 and P value is 0.003. The Mean±SE is  $48.75 \pm 1.5152$ .

Environmental domain is found significant in diagnosis time group April 2020-September 2020 where F value is 3.141 and P value is 0.028. The Mean±SE is  $126.25 \pm 4.17882$ .

**From Table-24: Association between WHOQOL domains and vaccination group**

Above table Physical domain is found significant in vaccination group who vaccinated booster dose where F value is 2.358 and P value is .099. The Mean±SE is  $95.102 \pm 0.79339$ .

In this study COVID-19 Contamination Anxiety found significant in not admitted to hospital group. While another study found that subjects who were hospitalized for Covid-19 experienced an increase in their levels of anxiety and depression (Argudar et al., 2020). This study suggests that COVID-19 positive coping found significant in not admitted to hospital group. In comparison to other study they showed that patients with COVID-19 who have higher levels of resilience have been related with lower levels of psychological distress. The most used coping strategies were emotional support, religion, and acceptance (Miglani et al., 2022).

In the present study, COVID-19 Positive Coping found significant in Booster dose vaccinated group. In contrast to another study they found that Vaccination against COVID-19 was associated with reductions in distress and perceived infection, hospitalization, and mortality risks (Koltai et al., 2021).

This study shows COVID-19 Mental Health Impact found significant in post- graduation group. While another study suggest that, During the outbreak, COVID-19-related symptoms and illnesses had no effect on the mental health of students (Sarajarvi et al., 2022). In the study, COVID-19 Contamination Anxiety found significant in female group, this is almost similar to another study where they found females reported higher contamination of fear to COVID -19 pandemic compared to men. Positive coping found significant in female group in our study,in opposite to the study where they suggested that women have higher negative expectations regarding the health effects of COVID-19 than males (Alsharawy et al., 2021). COVID-19 Conspiracy Beliefs found significant in male group in the present study, this also resembles the study where they suggested that this difference between the sexes persists across political affiliations and demonstrates that women are less inclined than men to support COVID-19 conspiracy theories (Alsharawy et al., 2021).

In the present study COVID- 19 Contamination Anxiety found significant in 32-39 age group. Another study indicated that, high levels of contamination anxiety were predicted

by age, education, gender, ADL, and prior exposure to COVID-19 among the elderly (77.9%) (Alhalal et al., 2022). The current study found association between mental health subscales and isolation period. This is similar to the study that showed that, prolonged social isolation leads to an increase in loneliness, which is a major risk factor for mental disorders (Kato et al., 2020).

In this study the frequency of male is 54.2% and female is 45.8%. In Another study conducted on healthcare workers on the covid 19 mental impact , 34 (81%) were female and 8 (19%) were male.

The study presents association with monthly income, hospital admission between overall quality of life. A study that included it, however, came to the conclusion that there was no substantial difference across the various income groups. Furthermore, previous studies addressing the relationship between money and quality of life found that a low income is related to a low quality of life (Mohsen et al., 2022). Another findings are there is association between age, family member, diagnosis, Isolation with overall quality of health. One study noted that, Health-related activities are correlated with age and gender. Although optimal health is regarded as a top concern, this impression does not always convert into preventative action (Deeks et al., 2009). Other study showed association with isolation with health condition among older people in COVID-19 pandemic situation. During the social distancing for COVID-19, older persons are more likely to experience unfavorable effects on both their mental and physical health. During the period of isolation, the main consequences that were reported were anxiety and depression, as well as poor sleep quality and lack of physical exercise (Sepulveda-Loyola et al., 2020). A study shows that There was a significant increase in the number of family members of COVID-19 survivors who reported having mental health symptoms three and twelve months after the survivors were admitted to the intensive care unit, which negatively impacted their quality of life and caused difficulties at work (Heesakkers et al., 2022).

In this present study there is significant association found between psychological domain and female group. There hasn't been a lot of research done on the topic of mental health problems that people experienced during the COVID-19 pandemic, especially in women.

On the other hand, the Covid-19 pandemic has had a much more severe impact on women than it has had on men, both as frontline workers and at home (Thibaut & van Wijngaarden-Cremers,2020).

The current study indicates association between diagnosing time (April 2020-September 2020) with psychological domains, social relationship, and environmental condition of WHOQOL scale. While another study identified 201 reports on mental health issues between March 2020 and March 2021, including 45 reports (22.4%) focused on stress due to the associated financial crisis, unemployment, and loneliness, and 50 reports (24.9%) of 80 apparent suicides linked to family issues, disharmony in conjugal relationships, harassment, sexual violence, emotional breakdown, financial crisis, and stigma due to COVID-19. In addition, we have identified 201 reports on substance abuse between March 2020 and March 2021, including 45 reports (22.4%) focused on substance abuse (Ashraf et al., 2021).

In this study booster dose is significantly associated with physical domains of WHOQOL scale. One study noted that the booster vaccine doses reduced the risk of infection in the same manner, whether it was symptomatic or asymptomatic. These data make it abundantly evident that administering a third dose of vaccination after an initial series of two doses is related with an improvement in the immune response to the vaccine antigen as well as a reduction in the risk of both symptomatic and asymptomatic infection (Wald, 2022).



**Limitations of study:**

This study explored the impact on mental health and quality of life among the physiotherapist who were suffered by COVID-19, there were few limitations of the study.

- It was not sufficient time and budget for the study to generalize the wider population in Bangladesh.
- The study covers the sample only from at a selected area or selected district. So, the result of the study cannot be generalized to impact on mental health and quality of life to all physiotherapist in Bangladesh.

**Conclusion**

This study investigating the impact of COVID-19 on mental and quality of life among the physiotherapist in Dhaka region. The findings of this study indicates that mental health subscales (e.g. Contamination Anxiety, Institutional and Political Trust, Positive Coping, Conspiracy Beliefs) are significantly associated with age group, gender, education, marital status, family members, monthly income, isolation, vaccination etc. Overall quality of life and quality of health is associated with age, family member, monthly income, diagnosis time, isolation and WHOQOL domains are significantly associated with age group (24-31), gender (female), diagnosing time group (April 2020-September 2020), Vaccination group (booster dose).

The COVID-19 outbreak affects all segments of the population particularly in health sector. This pandemic has drastically impacted on mental health because normal "routine," placing us in a range of challenging situations and requiring us to face frightening duties at times. As infectious characteristics of virus it has found to cause significant physical, psychological, social, and environmental impairments and decreased quality of life. So there is an urgent need for identification of the sectors which are more vulnerable by arising awareness and coping with unwanted situation.

## **Recommendation**

The purpose of this research is to evaluate the impact on mental health and quality of life among the physiotherapist who were suffered by COVID-19. Despite this, there were a few drawbacks to the research. It was determined that there are certain actions that may be made in order to get better results in the ongoing investigation.

The sample size of this research, 120 people, was too small and should be increased in future studies to find out overall situations in Bangladesh. In this particular study, just focused on mental health and quality of life. Other different aspect like impact on physical fitness or coping strategy can be focused in future. Future studies need to focus on a large area of population that can be found more specific result from that. Also other different aspect can be focused that helps to improve the physiotherapist's mental health and quality of life.

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## Appendix

### Informed Consent

*(Please read out to the participants)*

Assalamualaikum,

My name is Md. Rifat Al Mamun. I am conducting this research study which is the part of B.Sc. in Physiotherapy program and my research title is “**Impact of COVID-19 on Mental Health and Quality of life among the Physiotherapist in Dhaka**” under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related information regarding physical activity, depression and quality of life among people who had infected on COVID-19. You have to answer some questions which are mention in the attached form. This will take approximately 20-30 minutes.

I would like to inform you that this is a purely professional study and will not be used for any other purpose. So, your participation in the research will have no impact on your present or future sector. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with researcher Md Rifat Al Mamun or my supervisor Mohammad Anwar Hossain, Senior consultant and Head of Physiotherapy Department, Associate Professor, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

So, may I have your consent to proceed with the interview?

Yes

No

Signature of the Participant's..... Date.....

Signature of the Witness's..... Date.....

Signature of the Data collector's..... Date.....

### Questionnaire (English)

#### Part-1: Patient's Identification

1.1	Date of interview	
1.2	Name of respondent	
1.3	Address	
1.4	Contact number	

#### Part-2: Socio-Demographic Information

QN	Questions	Response
2.1	Age	
2.2	Gender	1=Male 2=Female
2.3	Education	1=Graduation 2=Post Graduate 3=PhD
2.4	Marital Status	1=Married 2=Unmarried

2.5	Family Members	
2.6	Average monthly family income	.....BDT

**Part-3: COVID-19 related information**

QN	Questions	Response
3.1	When did you diagnose COVID-19 positive?	
3.2	How long you were in isolation?	
3.3	Had you been admitted to the hospital?	1=Yes 2=No (if yes, mention the duration)
3.4	Days from symptom onset to the hospital admission	.....Days
3.5	What kind of treatment you have received during COVID-19 status	1=Medicine 2=Ventilation 3=Oxygen Supplementation
3.6	Do you have vaccination of COVID-19?	1=Yes, completed 1 dose 2=Yes, completed 2 doses 3=Yes, completed Booster dose 4=No
3.7	Has someone close to you been infected with COVID-19?	1=Yes 2=No
3.8	Please indicate which of the following risk factors for a severe course of COVID-19 apply to you.	
	Older than 60 years	Yes No
	Cardiovascular disease	Yes No
	Diabetes	Yes No
	Immunodeficiency, or taking medication that suppresses the immune system (e.g. cortisone)	Yes No

	Chronic disease of the respiratory system (e.g. asthma, chronic bronchitis)	Yes	No
	Chronic liver disease	Yes	No
	Chronic kidney disease	Yes	No
	Acute cancer	Yes	No
	Cancer during past 5 years	Yes	No
	Long-standing heavy cigarette consumption (more than 20 cigarettes per day in the last 5-10 years)	Yes	No
	none of the above risk factors	Yes	No

## Part-4

### Covid-19 Pandemic Mental Health Questionnaire (CoPaQ) - final version

#### *COVID-19 necessity of and compliance with countermeasures*

How necessary and useful do you consider the following behaviour since the COVID 19 pandemic?

	Not at all				Very much
<b>COVID-19 hygiene measures</b>					
Hygiene measures, such as					
a) keeping at least 1.5 metres distance from other people	0	1	2	3	4
b) coughing or sneezing into the crook of your arm or into a handkerchief	0	1	2	3	4
c) not touching mouth, eyes or nose with hands	0	1	2	3	4
d) regular washing of hands	0	1	2	3	4
e) washing hands extensively (for at least 30 seconds)	0	1	2	3	4
f) increased disinfection of hands and objects.	0	1	2	3	4
<b>COVID-19 social distancing</b>					
Reduction of social contacts, e.g.					
a) cancelling private meetings and family visits	0	1	2	3	4
b) cancelling trips to other cities	0	1	2	3	4
c) avoiding visits to canteens and restaurants	0	1	2	3	4
d) avoiding touching (e.g. shaking hands or hugging) when greeting or saying goodbye to other people	0	1	2	3	4
e) moving your work to home office	0	1	2	3	4
<b>COVID-19 anxiety buying</b>					

<b>Build up stocks, such as</b>					
a) soap, detergent, cleaning products, washing powder, etc.	0	1	2	3	4
b) food (vegetables, lentils, rice, pasta...)	0	1	2	3	4
c) water (20 litres per person)	0	1	2	3	4
d) toilet paper	0	1	2	3	4
e) cash	0	1	2	3	4
<b>COVID-19 political restrictions</b>					
Political measures, such as					
a) temporary closures of kindergartens, schools and universities	0	1	2	3	4
b) temporary border closures	0	1	2	3	4
c) temporary closures of playgrounds	0	1	2	3	4
d) temporary closure of bars, pubs, theatres, cinemas, etc.	0	1	2	3	4
e) temporary curfews	0	1	2	3	4
<b>COVID-19 solidarity-based behaviours</b>					
Solidarity-based behaviour, such as					
a) donating blood	0	1	2	3	4
b) supporting people at risk, such as shopping for them or staying at home to protect people at risk to protect people at risk	0	1	2	3	4
c) supporting people who are experiencing existential hardship due to the current situation	0	1	2	3	4
d) offering help to close friends and family members	0	1	2	3	4
e) getting involved in neighbourhood assistance	0	1	2	3	4

To what extent have you adhered to the following COVID-19 pandemic measures over the past two weeks?

	Not at all				Very much
a) Hygiene measures	0	1	2	3	4
b) Reduction of social contacts	0	1	2	3	4
c) Curfews	0	1	2	3	4

***Risk perception & COVID-19 contamination anxiety***

How do you currently perceive the risk of the COVID-19 pandemic?

“I am worried that...”

	Not at all				Very much
I will infect myself with COVID-19.	0	1	2	3	4
Please indicate how likely you think it is that you will be infected with COVID-19	0	1	2	3	4
people close to me are infected with COVID-19.	0	1	2	3	4
I will infect other people with COVID-19.	0	1	2	3	4

***COVID-19 mental health impact***

The following is a list of statements that deal with the handling and impact of the COVID-19 Pandemic. Please indicate the extent to which the following statements have applied to you in the **past two weeks**.

"Because of the COVID-19 pandemic, **over the past 14 days** I..."

	Not at all				Very much
<b>COVID-19 post-traumatic stress disorder symptoms</b>					
have had upsetting dreams that replay part of the experience of the COVID-19 pandemic or are clearly related to it.	0	1	2	3	4
have had powerful images or memories that sometimes	0	1	2	3	4



	Not at all				Very much
come into my mind in which I feel the experience of the COVID-19 pandemic is happening again in the here and now.					
have avoided internal reminders of the experience of the COVID-19 pandemic (e.g. thoughts, feeling, or physical sensations).	0	1	2	3	4
have avoided external reminders of the experience of the COVID-19 pandemic (e.g. people, places, conversations, objects, activities, or situations).	0	1	2	3	4
have been “super-alert”, watchful, or on guard.	0	1	2	3	4
<b>COVID-19 sleep disturbance</b>					
have suffered from sleep problems, such as					
a) difficulty falling asleep (< 30 minutes)	0	1	2	3	4
b) difficulty sleeping through the night	0	1	2	3	4
c) early morning awakening	0	1	2	3	4
<b>COVID-19 substance abuse</b>					
have smoked considerably more cigarettes than usual.	0	1	2	3	4
have consumed considerably more drugs (e.g. tranquilizers, sleeping pills or stimulants) than usual.	0	1	2	3	4
have felt a strong desire to consume addictive substances (alcohol, cigarettes, drugs).	0	1	2	3	4
have not been able to control my use of addictive substances (alcohol, cigarettes, drugs).	0	1	2	3	4

***COVID-19-specific stressors impact***

"Because of the COVID-19 pandemic, **over the past 14 days** I have felt stressed or burdened a lot by..."

	Not at all				Very much
a) the current pandemic.	0	1	2	3	4
b) living in a small accommodation.	0	1	2	3	4
c) being in quarantine.	0	1	2	3	4
d) childcare.	0	1	2	3	4
e) taking over school lessons.	0	1	2	3	4
f) the curfew.	0	1	2	3	4
g) being in home office.	0	1	2	3	4
h) customer service.	0	1	2	3	4
i) worries about my health.	0	1	2	3	4
j) worries of not being able to get medical care.	0	1	2	3	4
k) increased conflicts with people close to me.	0	1	2	3	4
l) financial worries.	0	1	2	3	4
m) uncertainties regarding my job, training place, studies or school.	0	1	2	3	4
n) fears of what the future will bring, or that I won't be able to cope with everything.	0	1	2	3	4

***COVID-19 positive coping***

**“Over the past 14 days I...”**

	Not at all				Very much
<b>Keeping a daytime structure</b>					
have maintained a regular daily routine.	0	1	2	3	4

	Not at all				Very much
have planned the day as detailed as possible.	0	1	2	3	4
have integrated sports and exercise into my daily life.	0	1	2	3	4
<b>Social contacts</b>					
have maintained my social contacts (telephone, visits or video chats).	0	1	2	3	4
have enjoyed the time together with people close to me.	0	1	2	3	4
<b>Inner strength</b>					
have focused on my inner strengths, resources, abilities and talents.	0	1	2	3	4
have changed my attitudes about what is really important to me in life.	0	1	2	3	4

***COVID-19 institutional & political trust***

**“Over the past 14 days I...”**

	Not at all				Very much
have had the feeling that the political leadership was standing up for me.	0	1	2	3	4
have perceived democracy as an effective form of government.	0	1	2	3	4
have had the feeling that public institutions (e.g. police, judiciary) can be relied upon	0	1	2	3	4
have had the feeling that news and reports on the COVID-19 pandemic are being deliberately withheld.	0	1	2	3	4
have perceived politicians as trustworthy.	0	1	2	3	4

***COVID-19 conspiracy beliefs***

**“Over the past 14 days I...”**

	Not at all				Very much
have had the feeling that false reports or untruths about the COVID-19 pandemic are being deliberately disseminated on public broadcasting (e.g. radio and television stations).	0	1	2	3	4
have had the belief that there are alternative or secret explanations for current events.	0	1	2	3	4
have had the belief that there is a relation between what is happening and the production and testing of biological weapons.	0	1	2	3	4
have had the belief that what is happening here is the effect of a struggle or competition between different superpowers.	0	1	2	3	4
have had the belief that this infection serves to deliberately reduce the world population, since there are no longer enough resources for everyone.	0	1	2	3	4

***H) COVID-19 social cohesion***

**“Over the past 14 days I have had the feeling that...”**

	Not at all				Very much
there is greater solidarity and cohesion in our society.	0	1	2	3	4
I am an integral part of our society or community.	0	1	2	3	4
our nation is growing closer together.	0	1	2	3	4

**Part-5**  
**THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL) - BREF**

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1





বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)  
**Bangladesh Health Professions Institute (BHPI)**  
(The Academic Institute of CRP)

Ref:

CRP/BHPI/IRB/04/2022/596

Date:

25/04/2022

Md. Rifat Al Mamun  
4<sup>th</sup> Year B.Sc. in Physiotherapy  
Session: 2016 – 2017  
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

**Subject:** Approval of the research project proposal “Impact of COVID-19 on mental health and quality of life among the physiotherapist in Dhaka” by ethics committee.

Dear Md. Rifat Al Mamun,  
Congratulations.

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Mohammad Anwar Hossain as thesis supervisor. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation Proposal
2	Questionnaire (English and Bengali version)
3	Information sheet & consent form.

The purpose of the study is to gain in-depth insight and understandings the impact of COVID-19 among the physiotherapist on their mental health and quality of life. Should there any interpretation, typo, spelling and grammatical mistakes in the title, it is the responsibilities of the investigator. Since the study involves questionnaire that takes maximum 20-30 minutes and have no likelihood of any harm to the participants, the members of the Ethics Committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on October 12, 2021, at BHPI (30<sup>th</sup> IRB Meeting).

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Muhammad Millat Hossain  
Assistant Professor, Dept. of Rehabilitation Science  
Member Secretary, Institutional Review Board (IRB)  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

The Chairman  
Institutional Review Board (IRB)  
Bangladesh Health Professions Institute (BHPI), CRP  
Savar, Dhaka-1343. Bangladesh

**Subject:** Application for review and ethical approval.

Dear sir,

With due respect, I am Md. Rifat Al Mamun, student of final year B.Sc. in Physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a research project entitled "**Impact of COVID-19 on mental health and quality of life among the physiotherapist in Dhaka.**" under the supervision of Mohammad Anwar Hossain, Associate Professor of BHPI & Senior Consultant & Head of Department of Physiotherapy, CRP.

The purpose of the study is to gain in-depth insight and understandings the impact of COVID-19 among the physiotherapist on their mental health and quality of life. The study involves face-to-face or by over phone interview by using questionnaire to find out the impact of COVID-19 among the physiotherapist in Dhaka that may take 20 to 30 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

Therefore, I look forward to having your kind approval for the research project and to start data collection. I can also assure you that I will maintain all the requirements for study.

Sincerely,

Thesis presentation date: 12<sup>th</sup> October 2021

*Md. Rifat Al Mamun*  
Md. Rifat Al Mamun  
Final Year B.Sc. in Physiotherapy  
Session: 2016 – 2017,  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh.

*Shafiq*  
Head of Department  
B.Sc. in Physiotherapy, BHPI.

Recommendation from the Supervisor

*Mohammad Anwar Hossain*  
Mohammad Anwar Hossain  
Associate Professor of BHPI.  
Senior Consultant & Head of Department of Physiotherapy, CRP, Savar, Dhaka-1343.

**Permission letter**

April 25, 2022

Head of the Physiotherapy Department

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka-1343.

**Through:** Head, Department of Physiotherapy, BHPI

**Subject: Seeking permission for data collection of 4<sup>th</sup> year Physiotherapy Research Project.**

Sir,

With due respect and humble submission to state that I am Md. Rifat Al Mamun, a student of 4<sup>th</sup> year B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). In 4<sup>th</sup> year course curriculum, I have to conduct a research project. The ethical committee has approved my research project entitled on "**Impact of COVID-19 on mental health and quality of life among the physiotherapist in Dhaka**" under the supervision of Mohammad Anwar Hossain, Associate Professor of BHPI, Senior Consultant & Head of Physiotherapy Department, CRP. I would like to collect data, for which I need your kind approval. I assure that anything of my study will not be harmful for my participants.

I therefore, pray and hope that you would be kind enough to grant my application and give me permission for data collection and oblige thereby.

Yours faithfully

*Md. Rifat Al Mamun*

Md. Rifat Al Mamun

4<sup>th</sup> year, B.Sc. in Physiotherapy

Roll: 04, Session: 2016-2017, ID No: 112160325

Bangladesh Health Professions Institute (BHPI)

CRP, Chapain, Savar, Dhaka-1343.

Approved  
*[Signature]*  
25/04/22  
MOHAMMAD ANWAR HOSSAIN  
Senior Consultant &  
Head of Physiotherapy Dept  
Associate Professor, BHPI  
CRP Savar, Dhaka-1343