TURKISH REPUBLIC OF NORTH CYPRUS

NEAR EAST UNIVERSITY

INSTITUTE OF GRADUTE STUDIES

DEPARTMENT OF BIOSTATISTICS

**PSYCHOLOGICAL DISTRESS AND ANXIETY LEVEL
AMONG HEALTHCARE WORKERS IN LAGOS STATE
NIGERIA DURING THE COVID-19 PANDEMIC**

M.Sc. THESIS

IJEOMA CHINAZO PAMELA NWOSU

NICOSIA

JUNE, 2024

NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

FACULTY OF MEDICINE

DEPARTMENT OF BIOSTATISTICS

PSYCHOLOGICAL DISTRESS AND ANXIETY LEVEL AMONG HEALTHCARE WORKERS IN LAGOS STATE NIGERIA DURING THE COVID-19 PANDEMIC

Ijeoma Chinazo Pamela NWOSU

MASTER OF SCIENCE IN BIOSTATISTICS

Supervisor

Prof. Dr. İlker ETİKAN

Nicosia

JUNE, 2024

Approval

We certify that we have read the thesis submitted by Nwosu Ijeoma Chinazo Pamela titled "**Psychological Distress and Anxiety Level among Healthcare Workers in Lagos Stata, Nigeria during the Covid-19 Pandemic**" and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science in Biostatistics.

Examining Committee	Name-Surname	Signature
Head of the Committee:	PROF. DR. ILKER ETIKAN	
Committee Member:	ASST. PROF. DR. HUSEYIN KUTLU	
Committee Member:	ASSOC. PROF. DR. OZGUR TOSUN	
Supervisor:	PROR. DR. ILKER ETIKAN	

Approved by the Head of the Department

16./.7./20.24

PROF. DR. ILKER ETIKAN

Title, Name-Surname

Head of the Department

Approved by the Institute of Graduate Studies

....../...../ 20...

Prof. Dr. Kemal Hüsnü Can Başer

Head of the Institute of Graduate Studies

Declaration of Ethical Principles

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Ijeoma Chinazo Pamela Nwosu

June 2024

Dedication

This Work is devoted to The Supremely Powerful God, for whom His Grace has been Exceedingly Satisfactory.

Acknowledgments

First of all, I gratefully offer my heartfelt thanks to Almighty God for His Grace upon my life. It has not been an easy journey but, I finally conquered.

Specially my sincere appreciation goes to my kind and understanding supervisor, head of the department of Biostatistics, Faculty of Medicine; Prof. Dr. İlker Etikan, for his time, unshakable support, and consistent encouragement and insightful criticism which was crucial in creating and completing this project.

I am incredibly appreciative of the Assoc. Prof. Dr. Özgür Tosun and other members of the department and Faculty for their mentorship and the opportunity to study under their guidance, I learnt a lot.

My profound gratitude goes to my wonderful friends and colleagues for their moral assistance, intellectual conversations, and companionship. I wish to specially thank Ikechukwu, Victor, Alvin, Christian, and Bonaventure; for their unwavering advice and ideas during my studies and research endeavors.

My immense love and appreciation goes to my ever-loving, understanding, and supportive husband and loving daughters who have been my source of strength. Thank you so much for your words of encouragement and prayers.

I particularly thank my mum, siblings, and in-laws for their unwavering love, tolerance, and comprehension. Your love and confidence in me have served as my motivation throughout this academic pursuit.

Finally, I would like to express my appreciation to my older brother; Mr. Kenechukwu Unachukwu and his lovely wife for their relentless contributions and assistance during my data collection.

I am humbly grateful to all who brought out time from their busy schedule to respond to my questionnaire, may God bless you all for your contributions.

Ijeoma Chinazo Pamela Nwosu

5

ABSTRACT

Psychological Distress and Anxiety Level among Healthcare Workers
In Lagos State, Nigeria during the Covid-19 Pandemic

Nwosu Ijeoma Chinazo Pamela

MSc, Department of Biostatistics

Thesis Supervisor: Prof. Dr. İlker Etikan

June, 2024

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is the enveloping positive-stranded RNA virus that is responsible for coronavirus illness (COVID-19). It began circulating from Wuhan City, China, leading to numerous instances of pneumonia around December 2019. It caused a worldwide health problem as it eventually swept throughout China and the rest of the world. The foundation for this work takes into account the need to evaluate the severity of mental illness alongside uneasiness that HCWs in Lagos, Nigeria, are experiencing due to COVID-19. It also looks to identify the interactions among socio-demographic factors, knowledge, beliefs, in addition to queries about COVID-19, along with different variables related to the mental health problems that HCWs are facing.

Method: A self-administered Google form questionnaire was used to recruit 378 respondents who worked in various public and private health institutions in Lagos State, Nigeria. The study was a cross-sectional descriptive survey. While inferential statistical analysis was conducted at a 95% confidence interval and $p \leq 0.05$ significance to test associations using Pearson's Chi-square and multiple linear regression tests, descriptive statistics evaluated frequencies and percentages.

Result: Out of the 378 participants in the study, women 235 (62.2%) made up the largest proportion of participants as opposed to men 143 (37.8%). The findings show that a significant percentage of respondents (81.0%), (60.1%), and (87.8%) had extreme severe levels of anxiety, sadness, and distress. Results ($X^2 = 4.932$, P= 0.05) & ($X^2 = 8.150$, P= 0.017) from the provision of adequate Personal protective gear (PPE) and showing changes in copying mechanism adopted were significantly associated with the degree of Psychological discomfort. Marital status along with the monthly income of healthcare personnel are a significant predictor of depression/anxiety levels (AOR= 0.105; p= 0.042), (AOR=0.105; p=0.000).

Conclusion: Healthcare workers in Nigeria experienced a high degree of psychological discomfort and anxiety amid covid-19 outbreak which is a consistent finding from studies conducted among HCWs around the world. Their high psychological issues are highly associated with females, and financial stability. There is need to promote the establishment of stress management practices, emphasizing the need to develop and improve emotional and social support programs.

Table of Contents

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

List of Tables   **Page**

List of Abbreviations

ANOVA   Analysis of Variance

COVID-19   Coronacirus Disease 2019

Et al   And others

GHQ-12   General Hospital Questionnaire

HADS   Hospital Anxiety and Depression Scale

HCWs   HealthCare Workers

K-10 scale   Kessler Psychological Distress Scale

PPE   Personnal Protective Equipment

RNA   Ribonucleic acid

TV   Television

WHO   World Health Organization

CHAPTER ONE

Introduction

1.1 Background to the study

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is the enveloping positive-stranded RNA virus that is responsible for coronavirus illness (COVID-19). It began circulating from Wuhan City, China, leading to numerous instances of pneumonia around December 2019. The reason for the name of the infection is that the infection is genetically related to the coronavirus of the SARS episode in 2003, even though the two infections are different. Coronavirus is a respiratory infection known to cause ailments such as the common cold, migraine, breathing issues, and serious intense respiratory syndrome. It caused a worldwide health problem as it eventually swept throughout China and the rest of the world. The coronavirus infection of 2019 was given the name COVID-19 by World Health Organization (Centers for Disease Control and Prevention, 2020). Hence, by March 2020 the following year, WHO subsequently designated that COVID-19 to be a serious epidemic.

Conforming to WHO (2022), the world recorded over 500 million diseased people at the same time having more than 6.3 million individuals who pass away as at June 2022. Surely COVID-19 has influenced people's physical state of mind, as well as had an enormous effect on their psychological comfort (Kafle et al., 2021). This outbreak particularly, disturbed the provision of healthcare resulting in considerable dreariness within the health workforce (Adams, 2020). As expressed by Lai, et al., 2019), the illness enhanced the likelihood for psychological disorders along with mental health issues in HCWs. Usually, HCWs are faced with the barriers of psychological trauma, uneasiness, weariness, and work-related burnout, according to Spoorthy et al., 2020). Lengthened work hours and psychological as well as physical pressures could possibly trigger post-traumatic stress disorder (PTSD) in healthcare personnel (Paladino et al., 2017).

By means of cough, talk, or sneeze droplets from someone who have been exposed to the disease, whether symptomatic or asymptomatic; coronavirus can be passed around through a single individual to another. Also by a less common means when you touch a surface containing the infectious agent has on it thereafter, have a direct contact with the nose, eye, or even your

mouth. The virus has an estimated incubation period of 2-14 days after exposure, (Baud, and others 2020). Huge predominance of the disease within the populace of numerous nations, its fast mode of spreading, and the related fear alongside the number of those that passed away are putting a peculiar request on wellness in addition to social assistance around the world. Along with the confirmation to clinics of a large number of real unwell patients, care requests on healthcare workers along with care aids are on the rise. Volunteers played a major part in the early days of palliative care development both within the community and in regulation settings. Even though family and proficient healthcare workers give the lion's share of end-of-life care, volunteers take up a few parts too. For example; helping with recreational and social programs, going by patients, taking them out, and giving companionship and support to these patients. These tasks are considered the center of giving quality palliative care. Past studies show that volunteers can emphatically impact the quality of care for both the individual who is dying and those near to them by decreasing push, applying commonsense and enthusiastic bolster, and giving a connection to the community (Plume & Abernethy, 2013). Healthcare workers carried on to help in the identification, treatment, alongside assisting patients with limited resources for weeks on end as part of the COVID-19 caring aids experts team (Newby et al., 2020). Healthcare workers are cutting-edge healthcare experts that patients meet up with, spend the most time with, and depend upon for recovery amid hospitalization; they play a prominent role in deciding the general well-being and fulfillment of a patient's hospitalization (Vincent & Creteur, 2020).

It is common for healthcare workers to feel focused, stressed, and on edge. Fear and anxiety during COVID-19 can be overpowering and might cause solid feelings in a person. Healthcare workers might encounter ethical strife which could lead to confrontation together with ethical trouble even ethical harm (Greenberg, et al., 2020). In any case, the outbreak has led to isolation from society alongside disgrace even in instances where losses of lives and illnesses have decreased (Xiang et al., 2020). Work done by Kim, 2018 as well as Xiang et al., 2020 revealed how these circumstances prompted healthcare professionals in support of isolated lives, guilt as well as choose to dwell in an area that limit their communication to the exterior world.

Solitude experienced by healthcare workers at the side of destitute quality social connections has been related to mental distress and anxiety which diminishes the quality and daytime brokenness (Jacob, et al., 2016).

Additionally, mental clashes interfering with the responsibility of HCWs to treat the sick with the privileged to self-protection against an illness that could be fatal have been highlighted (Chen et al., 2015). Life quality is subjective; it comprises both positive and negative aspects of life and it has many dimensions. Quality Of Life (QOL) is characterized according to the way people see themselves in life in the setting of how they live and esteem the life they are living approximately by what means they meet up with their objectives, desires, benchmarks and uneasiness" (Nazarpour et al., 2018). Healthcare workers particularly volunteer aid workers are too frightful thus, running a higher risk of a disease. As a result, they may not be able to provide high-quality therapeutic administrations and may indeed stop their work. COVID-19 is profoundly irresistible, which makes caregivers indeed more stressed almost their family individuals, subsequently making them more on edge, pushed, and more slanted to embrace negative adapting strategies.

Inadequate training in contamination control, need for information, and unclear specific tasks expanded personal risk and reduced eagerness to work. Assurance preparation can offer assistance to get the nature of irresistible diseases, standardize security measures, upgrade confidence, and improve healthcare workers' compliance with contamination control measures, hence decreasing the chance of malady transmission. Security preparation is fundamental, particularly for the highly infectious COVID-19 (Jiang, 2020; Khalid, 2016). Hence, the degree of burden experienced by healthcare workers is a critical concern. It has appeared that the more time the healthcare workers spend more time doing errands for the persistent, the more the healthcare workers' plan is changed and the more the healthcare workers involvement mental disorder and anxiety. It too has appeared that giving enthusiastic bolster for the understanding and others is seen to be one of the more difficult tasks for healthcare workers (Adams, 2020; Liu et al., 2020). Long-term mental health problems are especially dangerous for those who care for COVID-19 patients (World Health Organization, 2020; Xiang et al., 2020). According to Sun et al. (2020), the pandemic has caused their workload and working hours to grow by 1.5–2 times.

COVID-19 has affected people on a personal, family, societal, and international level, impacting nations with high as well as low incomes. Lockdowns and other safety measures enforced by governments caused economic disruptions. Many were unable to work, which resulted in shortages of food and other necessities as well as financial difficulties. It was necessary for governments to take action to stop hunger and other problems (Ornell, 2020; Container, 2020). To limit the virus, isolation and quarantine centers were set up, manned by medical personnel who took a chance on getting infected and dying. Healthcare professionals continue to treat COVID-19 patients in spite of these hazards; a few of these mental issues that they may experience are fear and anxiety. They may be frightened of themselves or their family members being tainted (Shyrock, 2020)

Healthcare professionals and the general population have experienced mental health problems such stress, anxiety, despair, and dread as a result of the confirmed cases and deaths from COVID-19 (Kang et al., 2020). Lack of firsthand information, restricted access to psychological assistance alongside insufficient instruction in the use of personal protective gears (PPE) and infection management are all contributing issues. These problems are made worse by the stress and hazards associated with one's job (Koinis et al., 2015; World Health Organization, 2021). Anxiety and despair may get worse due to a persistently high workload (Chen et al., 2021). Saudi Arabian healthcare personnel experienced severe burnout even prior to COVID-19 (Al Mutair et al., 2020).

Considering all things, the epidemic has brought attention to the mental health issues that healthcare professionals confront as a result of their jobs' increasing responsibilities, lack of support, and inherent hazards.

Additionally, healthcare specialists are exposed to workplace-related stressors and hazards and they may experience mental health issues (Koinis et al., 2015; World Health Organization, 2021). The continuously high everyday workload may create high rates of anxiety and misery among healthcare workers (Chen et al., 2021). There's a developing body of proof around huge burnout levels among healthcare workers in Saudi Arabia that was shown sometime recently by COVID-19 (Al Mutair et al., 2020).

It is additionally anticipated to have a bearing on the emotional wellness of individuals, particularly HCWs who typically serve at the cutting edge of proving care for those who have the disease (Tandon, 2020). Around the world, healthcare personnel face the challenge of working in environments with limited resources and handling increasing patient loads (Spoorthy et al., 2020). The mental disorder and anxiety among HCWs are ascribed to delayed work shifts, dubious pay, need for personal protective gears, and fear of contaminating themselves or their families (Zhang et al., 2020). Be that as it may, small data is accessible to almost the mental disorder and anxiety among HCWs from developing nations like Nigeria (Lagos). The foundation for this work takes into account the need to evaluate the severity of mental illness alongside uneasiness that HCWs in Lagos, Nigeria, are experiencing due to COVID-19. It also looks to identify the interactions among socio-demographic factors, knowledge, beliefs, in addition to queries about COVID-19, along with different variables related to the mental health problems that HCWs are facing.

1.2 Statement of the problem

All-inclusive, each service-providing organization, and in specific healthcare, is advancing with a swarm of a different populace of multi-dimensional disciplines, societies, races, religions, and different health challenges who regularly drone into the distinctive levels of health centers day by day either for individual or other partners. Healthcare professionals must continuously give the required healthcare services to patients who are regularly exposed to the peril of being contaminated with one sort of sickness, or infection through coordinated or circuitous contact with inner or outside partners who carry the malady or infection intentionally or unwittingly particularly when the health center is stuffed with different individuals and by this may influence the healthcare worker's duties. The rise of this Covid-19 has been an enormous test for healthcare frameworks in terms of their capabilities and shortcomings. A vital impact of this widespread has been its effect on staff mental health, where a few of the healthcare workers are mentally troubled and full of anxiety (Liang & Li, 2020). The high mortality rate, massive disease transmission capacity, and the deficiencies of health frameworks have had meaningful effect on the sanity of healthcare workers, and these impacts are continuous (Greenberg et al., 2020). According to a cross-sectional study conducted in Iran amid the COVID-19 widespread, 53.0% of innovative healthcare workers experienced burnout and this was related to destitute information and a negative state of mind (Lai et al., 2020). Moreover, social segregation,

especially when staff was exposed to delayed isolation, and the fear of contaminating their family were detailed as explanations for higher prevalence of illnesses related to stress among HCWs in times of emergency (Liu et al., 2020). In addition, these healthcare workers may be stressed due to sentiments of instabilities confronted with fundamentally sick patients (Chen et al., 2020). Medical workers have a crucial role in open health security as well as they too react to combat COVID-19, especially in sub-Saharan Africa (SSA), such as Nigeria, where labor is more (Wang et al., 2020). By and by, a shortage of information concerning how COVID-19 harms HCWs' state of mind within African nations, such as Nigeria, blocks fundamental proof to back the plan and usage of mental healthcare services for HCWs to succeed at relieving the impacts of COVID-19. Encounters of healthcare personnel included in COVID-19 flare-ups in Lagos State facilities speak to a profitable point of view that can be best captured to fortify labor capacity. By investigating the mental disorder and anxiety levels surrounding healthcare workers in Lagos, Nigeria amid COVID-19 widespread, individual can capture their basic points of view and recognize those components that foresee quality of life among them. These bits of knowledge can offer assistance to advice arrangements and hone for healthcare framework advancement, such as making strides in the administration of flare-ups.

The transmission of the infection among cutting-edge healthcare workers is overstated by stuffing, nonattendance of isolation centers, and a polluted environment and is likely upgraded by deficient information and mindfulness of infection control hones among healthcare workers. Packing of patients counting other partners in healing centers has been a challenge in most of our Nigerian-level healthcare centers and has been seen as a road to contracting maladies or infections. In any case, the novel outbreak (COVID-19) has worsened the situation coupled with healthcare professionals' brain-depleting routine has gotten to be the other of the day within the Nigerian health framework among other developing nations. COVID-19 had influenced the existence and health of over a million individuals all over the world. This overpowers numerous countries' healthcare frameworks, and, of course, influences healthcare suppliers such as medical attendants battling on the cutting edge to defend the lives of everybody involved. Investigating the mental issues that healthcare laborers confront amid their fight will offer assistance to bolster them and create conventions and plans to progress their readiness. Hence, this study looks into the psychological wellness and anxiety levels among healthcare personnel residing in Lagos amid the COVID-19 outbreak.

1.3 Aims and Objectives of the Study

Intention for this investigation is evaluating the extent of psychological distress and anxiety symptoms that HCWs in Nigeria have as a result of COVID-19. It also intends to find out the correlation between socio-demographic variables, COVID-19 knowledge and worries, and other factors related to mental health problems that HCWs were experiencing. The information would be useful in creating appropriate measures and guidelines meant to support the psychological mind of HCWs in Nigeria and other similar settings amid any epidemic.

The objectives are;

1. Find out how many healthcare workers (HCWs) in Nigeria are experiencing psychological distress and anxiety.

2. Discover what factors are causing psychological distress and anxiety amongst HCWs amid the spread of COVID-19   in Nigeria.

3. Look into how these risk factors relate to psychological issues in HWCs during the COVID-19 outbreak.

4. Give suggestions on the ways to improve HCWs' mental health alongside their overall well-being in Nigeria through better programs and policies.

1.4 Research Questions

1. How common is psychological distress and anxiety among HCWs?

2. What factors cause psychological distress along with anxiety among HCWs amid their COVID-19 work?

3. How are these determinants related with psychological distress and anxiety among these HCWs?

1.5 Significance/ Relevance of the Study

This investigation is going to highlight the difficulties and risks that Nigerian medical attendants face in their daily lives and at work while they fulfill their duties amid the outbreak. People don't feel compassion for medical attendants; instead, they assume that they must perform their assigned duties despite all obstacles. Moreover, the study will be instrumental in tending to organizational challenges confronting medical attendants in Nigeria. Frequently, Nigerian medical attendants set out on mechanical strikes to pull into consideration their predicament.

Once more, the study will help medical attendants gain knowledge of their enthusiastic state and its administration. The enthusiastic steadiness of healthcare workers is exceptionally vital in their competent and compelling nursing of patients in Nigeria.

1.6 Study's Scope and Limitations

The context of this research was selected according to the Population of Healthcare workers (including doctors, nurses, medical lab scientists, pharmacists, dieticians, etc.) living within Lagos during the pandemic period. Healthcare providers actively work at any healthcare institution amid the COVID-19 outbreak. The investigation centers on Nigerian healthcare personnel who suffered emotional stress and anxiousness amid the COVID-19 outbreak. It will investigate how Nigerian culture, economy, and healthcare system influenced them, but the conclusions may also apply to other locations. Nevertheless, this investigation might have limitations such as not having enough participants, biases in anonymous responses, and the pandemic's uncertain impact on healthcare personnel' mental health.

CHAPTER TWO

Literature Review

A literature review is a summary or an outline of earlier research work done relating to the proposed study. It is usually an academic paper in form of a book or journal. The study will show the frequency of psychological discomfort as well as the variables that are associated with anxiety and psychological distress. The process can be unrestricted when adequate or enough information is accessible, not requiring control by any outside factors.

2.1 Conceptual Literature Review

2.1.1 *An overview on how COVID-19 instances have affected Healthcare Workers*. In 2020, the World Health Organization highlighted some influences' COVID-19 has in healthcare workers, including specialists, nurses, lab technicians, support staff, and health information managers. They run the danger of coming into contact with contaminated people or objects, either directly or indirectly (CDC, 2020). Concurring to the Nigeria Health Watch (2020), healthcare personnel are crucial in the fight against COVID-19, and their safety should be a top priority globally. Healthcare workers worldwide are recognized as heroes for their brave efforts in combating the pandemic. However, despite the principle of causing no harm to patients, many healthcare workers, along with some patients, have faced unusual outcomes during the COVID-19 outbreak (Joob & Wiwanitkit, 2020).

Nigeria cannot be an exception to the significant effects this disease has created on healthcare personnel around the world. Due to increased workloads, inadequate availability of protection gear, and a great chance of falling ill, the Nigerian healthcare personnel are dealing with a number of hardships as a result of the worldwide epidemic which has impacted on both their professional responsibilities, physical and psychological wellness (Otu et al., 2020). These Medical personnel are more prone to the illness due to their close dealing with ill individuals and lacking protective clothing (Ejemot-Nwadiaro et al., 2020). Large numbers of them have become ill, requiring hospital stays, and, tragically, some have even passed away. Higher levels of mental discomfort have resulted from frontline workers' stress, anxiety, and fright. They have also been faced with stigma and prejudice (Ilesanmi et al., 2020). The outbreak incidents involving medical staff, as well as adjustments to how healthcare is provided, have had a strain on their

employment obligations. Due to workforce gaps brought on by rising rates of infection among HCWs, healthcare facilities are operating under extreme pressure, which lowers the standard of patient care (Ndulue et al., 2020).

The COVID-19 outbreak has predominantly hit elderly persons, primarily those residents in long-term care institutions. Evidence suggests that long-term care institutions have been linked to over 40% of deaths caused by COVID-19 in many countries, and up to 80% for certain nations with advanced economies. Furthermore, compared to people in similar age range who do not reside in long-term care institutions, the case fatality rate for residents having COVID-19 could have been greater in these facilities. Inhabitants of long-term care facilities are regularly confronted with lots of challenges, low preventive measures, and insufficient assets to recover from COVID-19, as well as diminished access to fundamental health services in a setting where health systems are encountering limitations amid the COVID-19 epidemic.

2.1.2 *The Fear of Contracting COVID-19.* Even for critical or emergency problems, some people opt out of obtaining medical attention out of fear of getting COVID-19. People's hesitation to visit hospitals or clinics has been aggravated by worries about contracting the virus in healthcare settings, as well as by false information and uncertainty regarding COVID-19 transmission (Fischer et al., 2020). Likewise, some healthcare workers have avoided hazardous medical jobs out of dread that they might contract the virus, which has increased the burden on the healthcare system and restricted the population's access to necessary healthcare services (Ilesanmi et al., 2020).

Older populations with more than one disease conditions get infected easily and can die faster from COVID-19, and caregivers avoid them from getting guests. Family members not living with this elderly people limits the frequency of their visits for the same reason, indeed when they wish to, there are limitations on this due to lockdown by the government as intercollege travels are prohibited but for restorative workers and nourishment providers.

2.1.3 *Access to Healthcare***.** COVID-19 appeared to have a major effect on Nigerian healthcare. Emergency services are being given top priority in hospitals and clinics so as to halt the virus's spread and safeguard patients and medical personnel. Because of this, senior citizens who suffer from long-term ailments including dementia, diabetes, cancer, arthritis, and stroke frequently aren't able to get routine care and instead only get it in an emergency. Due to lockdowns and safety concerns, several government hospitals have delayed non-emergency surgeries, while private health centers only provide restricted treatments. Elderly individuals or those caring for them can at times establish informal, limited arrangements with healthcare providers for help. People desiring treatment for illnesses connected to or unrelated to COVID-19 face considerable obstacles as a result of the pandemic's global disruption of access to healthcare facilities. Many issues have affected people's ability to get healthcare amid the pandemic, such as closed healthcare facilities, transportation delays, anxiety about contracting an infection, and overburdened healthcare systems (Murray et al., 2020). In order to guarantee that everyone, especially vulnerable groups, has fair access to healthcare, these issues must be resolved.

2.1.4 *Addressing the Post-pandemic Phase***.** Restructuring and fortifying medical facilities, which were heavily stretched by the demands of the epidemic, is imperative in the post-pandemic age. To make health systems more resilient to potential risks to public health, it will be essential to make acquisitions in workforce development, healthcare infrastructure, and cutting-edge technology (Kavanagh et al., 2021). Furthermore, care needs to be taken in tackling COVID-19's long-term health implications, such as managing ongoing medical illnesses and mental health issues brought on by the outbreak (Taquet et al., 2021).

Prior to the epidemic, Nigerians' access to quality healthcare wasn't particularly prioritized. But when the pandemic struck, everyone was impacted, regardless of socioeconomic standing or political inclination. Politicians who would typically travel overseas for medical care were forced to use the local system. As a result, treatment and isolation facilities spread quickly across the nation. There is worry, meanwhile, that the emphasis may move away from meeting the population's fundamental healthcare needs and toward developing upscale hospitals akin to those learned abroad.

2.1.5 *Challenges of COVID-19 cases among Health Care Personnel.* Healthcare personnel in Nigeria went through various obstacles in dealing with the COVID-19 outbreak. These issues have had a substantial influence on their capacity to offer effective care, and they have also jeopardized their personal health and peace of mind. They are more prone to getting COVID-19 owing to their continual contact with those with infection. Even with protective gear, they can become tainted if there is insufficient protection or infection management has not been carried out accurately (Lai et al., 2020).

Dhaka (2020) expressed social distancing to be a more appropriate method in controlling how the virus spread since this is not simple to actualize for healthcare experts who require coordinated contact with COVID-19 patients and places them on the verge of being contaminated themselves. By middle of October, 2020, about 4,797 HCWs were already down with the virus and report has it that hundreds of physicians had died in Bangladesh. The number of specialists particularly in a few government healthcare facilities is rare to the proportion in a few nations like Bangladesh (doctors/10,000 individuals). Consequently, numerous healthcare experts worked around 17 hours every day, working in various shifts, to mitigate this difficulty (Dhaka, 2020).

Besides, Adam (2020) unfolded the fact that healthcare experts confronted an intense deficiency of veils, gloves, and personal protective gears in securing them from COVID-19 disease. Locally delivered gears, veils, and some other supplies given to the specialist were detailed to be substandard and incapable of ensuring their total protection and safety (Adams, 2020). Healthcare experts also suffered from sleeping problems, depression, rest clutter, and emotional sadness due to the numerous increases in the work they were faced with and related pressures; alongside dissatisfactions owing to their lack of information, natural changes, and fear of disease for themselves and their families (Kisely et al., 2020). Throughout the COVID-19 pandemic, healthcare providers may have to make difficult decisions regarding who receives medical tools like ventilators. They want to be fair and compassionate while still doing what is right, so this may be very difficult (Greenberg et al., 2020).

Additionally, owing to COVID-19, certain communities have started mistreating healthcare personnel. Fear and false information about the virus could cause them to be harassed

or even injured. Their mental health may be impacted by this, which increases the stress of their work (Devakumar et al., 2020).

2.2 Theoretical Framework

2.2.1 *Social Exchange Theory*. According to Homans' (1961) social exchange theory, individuals within an organization interact with one another. It is predicated on the idea of payback in collaborations (West & Turner, 2007). Such as when a worker provides time and effort in return for compensation, and an employer offers a comfortable workplace in return for a devoted workforce. According to this view, there is a logical interchange mechanism at the foundation of the interaction between employees and the firm. Weighing the advantages and disadvantages of the connection defines how willing a worker is to contribute to the firm, according to Schein (1980). Whether a connection lasts depends on how well the organization and the personnel understand what each will provide and receive from the other.

2.2.2 *Theory of Psychological Contracts*. The psychological contract theory, which looks at human relationships by pointing out expectations of give and take, is based on social exchange theory. It originated by Rousseau in 1989 and implies that organizations and employees have unwritten agreements that specify what each party expects from the other. The psychological contract is this reciprocal, frequently unsaid understanding (Tekleab, Takevchi, & Taylor, 2005). This unwritten agreement specifies the parameters of the partnership and the tasks that must be completed (Coyle-Shapiro & Parzefall, 2008).

A balanced connection of give and take exists between the organization and the employee. In actuality, though, this equilibrium is rarely ideal (Coyle-Shapiro & Parzefall, 2008). The guidelines for weighing costs and advantages are subject to change and are unique to each person. A mental agreement is flexible, subject to changes in expectations, capabilities, and willingness on the part of either party to fulfill obligations. Expectations can cause unhappiness when they are not fulfilled. One aspect of the psychological contract is reaching a target. An employee's psychological contract is broken and they get angry and let down if their ambitions do not match the opportunities offered by the company.

2.2.3 *Theory of Frustration-Induced Behavior*. The social exchange idea is used by the frustration-induced behavior theory to investigate interpersonal relationships. Mullins (2005)

states that an individual has two possible reactions to having their purpose obstructed: innovative reaction or frustrated reaction. Finding a different objective or fixing problems are examples of constructive responses. On the other hand, negative behaviors including hostility, regression, obsession, and withdrawal are brought on by dissatisfaction.

Attacking the source of annoyance is hostility. Relapse is the return of infantile tendencies, such as sobbing. Detachment is giving up or leaving the situation, whereas obsession is continuous, ineffective action. The significance of the need, the degree of a worker's commitment to the objective, the level of their inspiration, and their perception of the barrier all influence how they react to dissatisfaction.

2.2.4 *Higgins, Self-Discrepancy Theory (1987).* The self-discrepancy theory describes why people respond differently to comparable events or failures, including losing a spouse, young one, or career. People might react very differently emotionally to the same incident, even when they are facing it. According to this hypothesis, people differ in how they portray their objectives. While some regard their aims as obligations or duties (ought to self-guides), others see them as hopes or ideals (ideal self-guides). The difference between "oughts" and "ideals" aids in the explanation of why different people respond emotionally differently to the same bad experiences. Thus, nurses tending to COVID-19 patients may respond in an alternative way based on whether they regard their work as carrying out a duty or trying to achieve something.

2.2.5 *Maslach's Multidimensional Theory (1993).* Three elements make up Maslach's multidimensional theory of burnout, which is grounded in fact as opposed to ideology. To begin with, there is emotional tiredness, which is related to conventional stress. Detachment is the second, in which people have a negative perception of events. The final factor is diminished individual achievement, in which people have a poor opinion of their productivity at work. The causes of exhaustion are mentally taxing interactions, as well as views nurses have toward patients, families, and hospital administration in addition to their peers.

2.3 Related Research

The consequences COVID-19 has on healthcare workers' mental well-being was studied by group of investigators (Consolata et al., 2020), found that healthcare workers, especially those treating infected patients, face emotional strain and worrying driven by the likelihood of getting

sick then escalating the disease to their loved ones, mainly older relatives or those having health conditions. The study aimed to understand the psychological effects on healthcare workers and the support they received. They searched through various databases and found 376 relevant studies over six months. Their survey included 19,232 HCWs, mostly female with 75.2%, who experienced physical symptoms related to COVID-19, stress, anxiety, sleep issues, and more. HCWs receive psychological assistance in the form of online emotional liberation techniques, on-site mindfulness-based crisis intervention, counseling and psychotherapy-based stress adaption sessions, and an effort-reward system. Numerous strategies identified in their survey proved beneficial in addressing psychological issues faced by healthcare workers. Encouraging these support programs is important for enhancing healthcare workers' mental health amid any outbreak.

Following the COVID-19 outbreak, Nri-Ezedi and others (2020), examined the psychological suffering among Nigerian citizens. The influence of the COVID-19 outbreak and lockdown on the emotional health of Nigerian adults remains unclear. Their research aims at determining prevalence of mental illness in adult Nigerians and explores any potentially dangerous characteristics. Between April 24, 2020, and May 30, 2020, interested respondents were given access to an online summary made by Google Shape through social media platforms. The prevalence of mental health issue was measured using Kessler's mental illness scale. A total of 815 adults answered the summary; the male to female ratio was 1:1.4, with 344 (42.2%) being men and 471 (57.8%) were women. The Nigerian Centre for Disease Control (NCDC) (0.8%) was the least reliable source of information, with TV (28.1%), WhatsApp (16.5%), with medical professionals (14.3%) being the top 3 sources of knowledge about COVID-19 reality. 47.3% of respondents reported having a mental illness; 41.4% were at medium risk alongside 5.9% were at high risk. Notable factors include age, profession, income, employment status, and an assessment of the respondent's likelihood of accepting the possibility that they may be afflicted with the illness. Among Nigerian adults, mental disorders were found to be quite prevalent. This necessitates a careful evaluation of the current national convention among grown-ups living in Nigeria (Nri-Ezedi et al., 2020).

The life-distress and work-burnout amongst nurses in the eastern part of Nigeria were researched by Okechukwu and Obed (2020) as determinants of organizational responses and

social-emotional balance. This cross-sectional investigation involved 230 nurses between the ages of 25 and 48 who were employed by several general hospitals in the Nigerian state of Anambra were recruited using the cluster sampling method. Their standard deviation was 5.33 and their average age was 33.83. For data analysis, multiple regression statistical analysis was employed. As a result, there is a connection between life stress and the administrative and organizational responses of nurses. The administrative responses of nurses are unrelated to burnout. There is no connection between a nurse's emotional stability and life stress. The emotional stability of nurses is adversely impacted by burnout. Organizational reactions from nurses will not result from personal suffering. Stress in life won't make a nurse emotionally stable. Organizational responses from nurses will not result from burnout. Emotional stability in nurses will result from less burnout. Healthcare facilities should construct complementary, healthy psycho-organizational aids that will support nurses manage their everyday challenges and burnout. This will assist medical professionals in adjusting to the demands of handling the COVID-19 widespread or any future outbreaks (Okechkwu & Obed, 2020).

Oche and others, (2020) handled a study on the emotional implications of COVID-19 epidemic on medical professionals in a research that was done in Nigeria. According to the survey, 13.9% of healthcare professionals reported having signs of depression and 28.8% reported having symptoms of anxiety (Oche et al., 2020). According to a different research by Adewuya and others (2021), 14.2% and 34.5%, of Nigerian healthcare professionals reported having depressive and anxious symptoms respectively.

Andrew et al. (2021) investigated psychological discomfort together with sleeping issues in healthcare professionals in developing country amid the widespread of Covid-19. A cross-sectional inquiry had been carried out, amidst 303 healthcare personnel filling out the generalized health questionnaire and the Pittsburg sleep quality index. Majority of the HCWs were males 183 representing 60.4% and 120 females. Most of them were married (70.3%) having over 10 years' experience in nursing care services (72.9%). Prevalence of psychological distress was seen to be 23.4% and it's inter relationship with sleeping issues (p=0.001) plus an effect value= 0.2). In every 10 HCWs, 6 had sleeping problems. To minimize these mental problems, preventive support programs for HCWs was advised and a culturally sensitive strategies should be put in place to contain for subsequent pandemics.

Odikpo and others (2021), assessed Nigerian nurses' knowledge and reasons for fear about COVID 19. The examination aimed at gathering information about Nigerian nurses' attitudes, states of mind, and levels of fear around coronavirus. They conducted an online cross-sectional quantitative investigation, with 418 nurses completing a Google form questionnaire. The Statistical Package for Social Science (SPSS-20) was utilized in evaluating information gotten, and inferential data was also analyzed using Chi-Square at a 95% (p=0.05) level. According to the survey, there were 81.3% more female nurses than male nurses, with an average age of 37.81 years and an average experience of 13.1 years. Of the nurses, 56.9% were nervous and had a thorough comprehension of COVID-19. Nevertheless, their anxiety was not significantly influenced by their awareness of COVID-19 (p > 0.05). In order to enhance their psychological well-being, it is crucial to investigate further causes of their worry (Odikpo et al., 2021).

In 2021, Chirico and colleagues conducted a quick review of various studies to understand the incidence of psychological problems among medical personnel amid the COVID-19 outbreak. They aimed to highlight the widespread occurrence of these disorders among healthcare workers. Using several databases, they summarized systematic reviews and meta-analyses on this topic. They discovered that PTSD, anxiety, sadness, burnout, and difficulty sleeping were all prevalent. Fourteen publications that showed the substantial effects of mental health on healthcare workers were included in their review. Sleep issues (5), burnout syndrome (3), PTSD (3), high stress (3), anguish (3), psycho-traumatic disorder (1), and dread (1) were the next most common study findings, with ten mentioning anxiety and depression. To address these concerns and avert more complications, they suggested mental health therapy and therapies (Chirico et al., 2021).

Amid the COVID-19 outbreak, research was conducted by Hamza and colleagues on the cross-cultural incidence of insomnia and mental health issues within healthcare personnel. During periods of disaster, poor sleep and emotional difficulties occur.. There is worry about COVID-19's impacts on healthcare personnel since it has had a significant impact on healthcare services globally. Their investigation was sought to assess the psychological distress alongside insomnia experienced by healthcare personnel amid the widespread of COVID-19. Their task was to conduct a multi-centric cross-sectional study with an emphasis on healthcare personnel from Nepal, Pakistan, and India. The General Health Questionnaire and Pittsburg Sleep Quality

Index were administered online, and SPSS 24 was used to analyze the result. 1790 people in all answered the questionnaire. Ten percent of the 1790 participants reported having severe psychological discomfort, and fifty-seven percent reported having poor quality sleep. A cross-cultural analysis revealed certain variations between the various participant groups. According to their research, a sizable percentage of healthcare personnel were facing anxiety along with poor sleep amid the COVID-19 outbreak. They emphasized how crucial it is to offer them psychosocial assistance in order to prevent any short- and long-term psychological issues (Hamza et al., 2021).

A study on the emotional effects of COVID-19 on nurses in two tertiary hospitals in Nigeria was conducted by Jumbo and others in 2021. One hundred and eleven nurses in all filled out a general health questionnaire (GHQ–12) adopting the basic random sample technique. The findings showed that psychological discomfort was prevalent in 64.9% of the population, with females (61.3%) exhibiting higher levels of distress than men (38.7%) at p = 0.003. Additionally, individuals who had direct interaction with Covid-19 patients expressed higher discomfort than people who had no interaction (p= 0.02). Nurses who had received infection prevention training demonstrated that this had a role in reducing the emergence of psychological discomfort (p= 0.002). The study recommended that in order to reduce these dangers to mental health, the state of mind of HCWs ought to be mediated (Jumbo et al., 2021).

Additionally, at two discrete Covid-19 isolation units located in Lagos, Nigeria, the degree of nervousness, depression, and coping mechanisms among frontline healthcare staff was investigated by Sonuga and Aina (2021). Healthcare workers serving at the forefront interact closely with COVID-19-positive individuals at isolation facilities sometimes deal with anxiety and sadness. This study set intended to determine the degree of nervousness, sadness, and coping mechanisms among front-line healthcare staff members working in two isolation centers. 181 HCWs from the two isolation centers were included to the cross-sectional descriptive survey using the validated questionnaire, which had an internal consistency of 0.65 to 0.89 on the Cronbach alpha scale. At the two Covid-19 isolation centers, the HCWs received the questionnaire online via the WhatsApp group platform. Statistical techniques for inferential and descriptive analysis were applied to the collected data. A significance threshold of 5% was used to the statistical test. The findings revealed that 31.5% of respondents were afraid because they

knew nothing about COVID-19, 38.1% remained afraid of contamination despite safety steps, and 35.4% were afraid since many coworkers had died from the disease. These studies revealed that front-line healthcare personnel experienced variable amounts of anxiety and mild levels of sadness. They were really afraid of COVID-19, and several of them were depressed. In the event of an outbreak, it is advised that healthcare personnel get psychological assistance.

In the midst of the COVID-19 epidemic, Ibigbami and others conducted research on psychological distress among Nigerian healthcare personnel, including anxiety and depressive disorder. They surveyed 434 HCWs from two health centers in Nigeria's southwest region, mostly nurses and physicians. Using statistical analysis, they found that around 55% experienced moderate to severe psychological distress, with nurses being more affected. Factors like higher anxiety and depression levels increased the likelihood of distress. Their study highlights the need to support HCWs' mental health during such crises (Ibigbami et al., 2022).

Olude and team investigated the emotional wellness of physicians alongside nurses at a hospital in Nigeria. They surveyed 1452 healthcare workers about patient health, anxiety, and stress levels. Most respondents (72.5%) were female nurses, who showed higher rates of mental health issues compared to physicians. Those who experienced personal loss during the outbreak were more likely to feel depressed. The study found that 62.4% reported stress, 9.8% had depressive disorder and 5.0% experienced anxiety. They suggested stress management and psychosocial support as ways to alleviate these mental health challenges (Olude et al., 2022).

Ndubuisi studied the psychological difficulties and coping mechanisms faced by medical staff members at the University of Benin Teaching Hospital in Edo State who were placed under quarantine after being exposed to confirmed COVID-19 cases. The purpose of the study was to ascertain how the isolation affected their psychological health and coping mechanisms. The study involved thirty-two healthcare professionals. Due to the contagious nature of SARS-CoV-2, healthcare professionals around the world deal with comparable difficulties. They completed assessments for general anxiety disorder and depression. The average age of the 32 isolated health personnel was 32.4 ± 8.4 years, with 59.4% of them being female. Of those who participated in the study, 46.9% were physicians and nurses, respectively. Anxiety, depressive disorder, and anxiety-depression were prevalent in 9.4%, 12.5%, and 9.4% of cases, respectively.

To enhance the emotional wellness of employees, health-care managers should encourage the creation of official workplace mental health program (Ndubuisi, 2022).

Iwu and his team conducted an investigation to find out the way COVID-19 affects healthcare professionals' mental health in a low-income setting. They looked at various factors to see how anxiousness, depression, and stressful situations are prevalent amongst HCWs in this context. This study included 386 healthcare workers from a public health facility in Imo State, Nigeria, who completed an online questionnaire. They used statistical methods like the Kruskal Wallis H test and logistic regression for analysis. The findings demonstrated that healthcare personnel, particularly those who were younger, female, and single, frequently experienced stress, anxiety, and depression. The individuals with the greatest median stress level (13.9) were females aged 20 to 29 who were unmarried, had less than a year's job experience, used public transit, and had formal training in prevention and control.

Furthermore, female HCWs had basically higher odds of experiencing depression (OR: 1.88; p=0.006) or anxiousness (OR: 1.76; p=0.013) than male HCWs. Stress, anxiety, and depression are common between HCWs, particularly among younger, female, and single employees. Female healthcare workers were much more probable to suffer from depression or anxiety compared to males. The study suggests that mental health support programs should pay particular attention to these groups (Iwu et al., 2023).

Imishue and colleagues examined the Quality of Life for medical workers in Nigeria amid the COVID-19 outbreak. They found that the outbreak led to increased workloads, burnout, psychiatric symptoms, and post-traumatic stress disorder amongst healthcare workers. Their surveys' purpose was to assess the mental wellness of HCWs during initial wave of the outbreak and identify the contributing factors. They conducted a survey using an online questionnaire sent via email and WhatsApp to healthcare workers in Nigeria. The survey included 154 participants, with 54.5% female and 45.5% male, mostly physicians and nurses. The average age of respondents was 38.8 years. Most respondents reported high scores on the Quality of Life assessment. Factors like age, sex, religion, marital status, and years of experience showed no significant association with Quality of Life scores. However, overall health assessment was linked

to Quality of Life scores. The study concluded that there was no impact on healthcare personnel' standard of Life in Nigeria amid the initial surge of the outbreak (Imishue et al., 2023).

2.4 Defining Variables Practically;

Organizational reactions: These have to do with how healthcare practitioners respond to the environment at their workplace. It's measured using the Index of Organizational Reactions (IOR), created by Smith in 1976 which was later tested in Nigeria by someone called Mogaji in 1997.

Emotional stability: It is gauged with the Emotional Stability Scale which was devised by the scientists; Li and Ahlstrom in 2015. It denotes the ability to withstand difficult situations, overcome misfortune, and retain competence and productivity in high-stress situations. In order words, refers to the capacity to endure trying circumstances, overcome misfortune, and continue to be capable and productive during a trying time.

Life-distress: The term entails various symptoms of distress affecting a nurse's ability to perform both socially and professionally. The Symptom Distress Checklist-90 (SCL-90), developed by Derogatis, Lipman, and Covi in 1977 and confirmed by Erinoso in Nigeria in 1996, is used to test it.

Burnout: Burnout is referred to as a decline in both mental and physical well-being brought on by working circumstances as assessed by Maslach and Jackson (1986) using the Maslach Burnout Inventory (MBI).

CHAPTER THREE

Methodology

3.1 Study Area; Lagos State

Lagos State, formed on May 27, 1967, is one of Nigeria's 36 states. Despite previously serving as the country's capital, Lagos remains its commercial and economic center. Located in the southwest, it borders Benin Republic to the west and stretches over 180 kilometers along the Atlantic Ocean. It shares boundaries with Ogun State to the north and east. Lagos is divided into four administrative divisions: Ikeja, Ikorodu, Epe, and Badagry. While it's the smallest state, it has the highest population, with about 9 million residents, making up a significant portion of Nigeria's urban population. Estimates suggest the city's population may have reached 24.6 million in 2015 and projected to reach 35 million by 2020. Lagos is known for its cultural diversity and economic opportunities, attracting people from all over Nigeria, Africa, and beyond. This migration is fueled by its strong economy, strategic location, and social and political significance.

3.2 Research Design

This describes how to link realistic research aims with research questions (Creswell, 2014). It guarantees accurate measurement, data collection, followed by analysis. This investigation employed descriptive, cross-sectional study design method for assessing frequencies of mental discomfort, relationships that exist between the two and socio-demographic factors, in addition to examine the factors that are independently related with it in the study population, which is healthcare employees. The well-being of healthcare professionals is the dependent variable, whereas psychological discomfort and anxiety are the independent factors.

3.3 Population for the Study

This refers to a larger group of individuals or objects that a researcher targets for a scientific inquiry. In this study, the target population is made up of healthcare workers residing in Lagos state, Nigeria. Healthcare workers are those individuals who have been formally engaged in recognized health institutions as per the guidelines of World Health Organization.s

3.4 Sample Size and Criteria

According to Pallant (2007), a sampling size of 30 is statistically reasonable for a study. Inclusion criteria represent essential characteristics of the chosen group that the investigator utilizes to address the research questions, while exclusion criteria denote the factors that render healthcare workers ineligible for participation in the study. The study's inclusion criteria encompass Healthcare workers residing in the city of Lagos, Nigeria during the Covid-19 outbreak and were directly or indirectly involved, while the exclusion criteria pertain to healthcare workers residing outside Nigeria during the outbreak. The Cochran's formula is applied to estimate the study's sample size;

$Z^2 Pq/e^2 = n$

In which n = the needed number of samples

Z, which may be obtained from ordinary normal distribution tables, represents the 95% confidence level.

p = estimated number of individuals obtained from healthcare personnel level of anxiety in a prior research done in Nigeria (28.8%), Oche et al. (2020).

1- P = q

e = the error margin at 5% (standard value of 0.05).

Changing values:

n = $(1.96)^2$* 0.288* 0.712 / (0.05)2

n = 315

The needed number of samples was then calculated to be 315 and raised to be 378 (20%) in order to account for any potentially missing data).

3.5 Sampling Technique

It entails selecting a portion of data units from a larger population, as outlined by McEwan (2020). The two primary categories of sampling procedures are probability and non-probability sampling. To select participants for this study, probability sampling was utilized. Specifically, a

stratified sampling approach was employed to select Healthcare workers who were working and residing in the urban communities of Lagos state amid the outbreak.

3.6 Nature/Sources of Data

Data sources can be categorized into two main types: primary and secondary. The Primary source involves collecting information directly from the source through methods like interviews, surveys, or experiments. Conversely, secondary data consists of pre-existing information gathered by other researchers, such as journal articles or academic book reviews.

For this study, primary data Questionnaires were gathered using Google Forms and were directed to mainly Healthcare personnel residing in the study region through whatsapp and e-mails.

3.7 Tools for Data Collection

It entails the systematic gathering of information aimed at addressing the key evaluation inquiries delineated by the researcher. In this research, an organized questionnaire has been employed to collect information from healthcare personnel residing in Lagos state. The questionnaires covers demographic aspects including gender, age, education, marital status, and occupation, alongside inquiries about participants' thoughts on the level of incidence of psychological discomfort, alongside how variables independently related to mental wellness and anxiety. It consisted of 5 sections;

1. Socio-demographic information (just like gender, age, education, marital status etc.),

2. Work-related factors, and coping mechanism,

3. The General Health Questionnaire-12 (GHQ-12) used for psychological conditions (anxiety/depression) assessment.

4. The Hospital Anxiety and Depression Scale (HADS), which features 14 item questions containing 7 questions for anxiety and another 7 for depression.

5. Kessler Psychological distress (K-10) Scale, this questionnaire contains 10 questions that is usually used to check the extent of psychological distress of an individual.

3.8 Procedures for Data Analysis

Data analysis involves processes that are adopted in converting the raw information available into a comprehensible, coherent, and conclusive format that facilitates decision-making process. The data for this study was being sourced from healthcare workers residing in Lagos state. To gauge the prevalence of psychological distress and anxiety, a Google form question was created that asked respondents to identify the elements that were independently related with psychological distress and anxiety.

For accuracy, data collected was being structured, organized, and edited as necessary. Subsequently, it was entered into an excel file then, transferred and estimated employing the Statistical Package for Social Sciences (SPSS) version 26. Various analyses was then conducted, such as the use of descriptive statistics like frequencies, mean, percentages, etc. for analyzing the information collected and inferential statistics like NxM Pearson's Chi-square to find the factors contributing to psychological distress and anxiety amongst HCWs, and multiple linear regressions to check for predictors alongside connections to the levels of psychological problems with regards to the socio-demographic elements to generate conclusions and forecast based on the information that was gathered.

Level of anxiety and depression, and stress were calculated with the 5-point linkert type scale.

The grouping of the linkert questionnaire items into continuous variables was thus: 0-9(normal), 10-13(mild), 14-20(moderate), 21-27(severe), 28 and above(extremely severe).

The GHQ-12 questionnaire (yes or no) was scored using bimodal scoring interpretation and grouped thus; 0-3(low level of psychological distress, 4-12 (high level of psychological distress.

3.8 Validity and Reliability of Instruments

When examining the study title on psychological discomfort and anxiety among healthcare personnel amid COVID-19 epidemic, the Hospital Anxiety and Depression Scale (HADS) was one of the questionnaires used in this investigation because it's rooted in subjects related to the research concern and had importance as noted by Bjelland et al (2002). Validity assesses how the closeness of the data gathered relates the true parameters of the inquiry, taking into consideration

concepts of theory along with actual evidence to back up the accuracy of outcomes and suggestions based on assessments (Trochim & Donnelly, 2008).

Also, reliability test is done to demonstrate how the test outcomes' durability and uniformity throughout so many examinations or under various circumstances. Reliability determination is done applying Cronbach's alpha test. Cronbach's Alpha examination for each of the questionnaires used in assessing psychological discomfort were tested and found to be reliable.

3.9 Consideration of Ethical Issues

Participants gave their consent with respect to keeping their identities private.

They understood that they might choose to pull out of the study any time or refuse to participate.

In addition, those who took part were informed that declining to take part in the study had no consequences.

Every piece of information gathered was strictly available to the person carrying out the study.

CHAPTER FOUR

Results and Interpretations

To fulfill the goals of the study, the data gathered is presented and examined in this part. For clarity, data from 378 respondents were summarized using basic frequencies, percentages, and averages. The study's objectives were to evaluate the extent of psychological discomfort alongside anxiety that COVID-19 has caused amongst Nigerian healthcare workers (HCWs) and investigate the connections between mental health problems and socio-demographic characteristics, work-related experiences, along with coping methods. Furthermore, variables that were independently linked to psychological discomfort were examined. Findings are based on 378 respondents who completed the online questionnaires.

Results

4.1 Personal Data of Respondents

Out of the 378 participants in the study, women 235(62.2%) made up the largest proportion of participants as opposed to men 143(37.8%). According to the age breakdown of the participants revealed that the majority were between the ages of 18 and 35 (57.4%), proceeded by those between the ages of 36 and 45 (29.9%), 46 and 55 (11.4%), and 56 years and over (1.3%). Regarding marital status, a little more than half (51.9%) were single, 42.3% were married, and the remaining individuals were widowed (2.6%), divorced (2.9%). The majority of the population (96.0%) had a postsecondary education background, while only 4.0% had a secondary education. Occupations of individual were different; the highest proportion of the workforce was made up of nurses (44.7%), then doctors (18.5%), medical laboratory scientists (11.6%), and a variety of other Allied healthcare personnel (20.1%). In terms of working experience, 38.1% had five to ten years, 20.4% had more than ten years, and 41.5% had less than five years. 53.4% of the monthly income levels were reported to be above 100,000 Naira, 31.5% to be between 50,000 and 100,000 Naira, and 15.1% to be below 50,000 Naira. Lastly, full-time employment accounted for 70.1% of the participants, whereas part-time employment made up 29.9% (Table 4.1 below).

Table 4.1:

Socio-Demographic Information of the Responders

Gender	Frequency	Percent
Female	235	62.2
Male	143	37.8
Total	378	100
Age		
18 – 35 years	217	57.4
36 – 45 years	113	29.9
46 – 55 years	43	11.4
56 years and above	5	1.3
Marital Status		
Single	196	51.9
Married	160	42.3
Divorced	11	2.9
Widowed	11	2.9
Educational level		
Tertiary	363	96.0
Secondary school	15	4.0
Occupation		
Medical Laboratory Scientist	44	11.6
Nurse	169	44.7
Doctor	70	18.5
Pharmacist	22	5.8
Other Allied Health Professional	73	20.1
Years of experience		
>5 years	157	41.5
5 – 10 years	144	38.1

10 years<	77	20.4
Monthly Income		
> 50,000	57	15.1
50,000 – 100,000 Naira	119	31.5
100,000 Naira <	202	53.4
Employment status		
Full time	265	70.1
Part-time	113	29.9
Total	378	100.0

Table 4.1(continued)

4.2: Test of Normality

Normality test for different variables (work-related experience and coping mechanism, GHQ-12, HADS, and Kessler- 10 scale questionnaires) were performed to ascertain whether the data are distributed normally. From the results on the table 4.2 below, the p-value for all variables was seen to be p<0.000 with the Kolmogorov-Smirnov test for normality (N> 50) and this shows that the data are statistically significant so, they are not normally distributed. Considering the data is not distributed normally, non-parametric tests will be employed in running analysis for these variables.

Table 4.2

Normality Test for Different Variables

Test of Normality	Total N	p-value
Work-related factors	378	.000
GHQ_12	378	.000
HADS	378	.000

Kessler_10scale   378   .000

Table 4.2(continued)

N= sum total of responders, while p<0.05 indicates significance in the p-value.

4.3: Levels of Psychological Distress and Anxiety amongst the Respondents in Lagos state, Nigeria amid COVID-19 outbreak.

Three standardized measures were deployed in this study to evaluate psychological distress and anxiety symptoms of 378 respondents and the findings shows that with a median score of 1.5000 (SD = 0.21005) on the General Health Questionnaire-12 (GHQ-12), 23.5% of respondents reported having low symptoms of anxiety and depression. Meanwhile, 39.6% of respondents reported having high symptoms of anxiety and depression on the Hospital Anxiety and Depression Scale (HADS), with a median score of 2.3571 (SD = 0.65060). Furthermore, with a median score of 2.2000 (SD = 0.81349) on the Kessler Psychological Distress Scaling (K-10), 36.9% of the participants indicated having high psychological distress. Amid the outbreak, respondents showed moderate to high symptoms of psychological discomfort alongside anxiety, as demonstrated by the aggregate weighted average of these responses, at 2.0190 (Table 4.3). The reliability result for each of the questionnaire used for this investigation had a Cronbash's Alpha values of 0.671-0.746, 0.808-0.826, and 0.878-0.902 for GHQ-12, HADS, and Kessler Psychological distress scale questionnaires correspondingly.

When compared with other research carried out across nations around the world, this result aligns. In this context, Lai and his colleagues' study in 2020 observed 50.4% of health personnel showed symptoms of sadness, 34.0% reported sleeplessness, and 44.6% claimed anxiety, emphasizing the outbreak's significant psychological effects on HCWs. Another study by Pappa and others in 2020 discovered in their systematic analysis that within the COVID-19 outbreak, healthcare personnel demonstrated notable levels of depression (22.8%) and anxiety (23.2%), which is consistent with the higher than average levels observed in this investigation.

Additionally, studies conducted by Spoorthy et al. in 2020 showed that healthcare personnel had significant psychological problems, alongside high incidences of worry, depression and stress brought on by things like a lack of assistance, an excessive workload, and dread of disease.

This study's findings on psychological distress and anxiety levels among respondents highlight the critical need for focused psychological strategies and assistance networks, as they align with the worldwide trend of serious psychological problems that healthcare personnel encountered amid COVID-19 outbreak. The findings also shows that a significant percentage of respondents (81.0%), (60.1%), and (87.8%) had extreme severe levels of anxiety, sadness, and distress. The potential of a large psychological influence is identical to past findings, despite differences in the percentages (Table 4.2.1).

Table 4.3

Assessment of Psychological Distress and Anxiety/Depressive Symptoms of Respondents Based on the Different Questionnaires Used with the Weighted Average

Questions	Number of Respondents	Percentage (%)	Median	Standard Deviation	Remark
GHQ-12- anxiety/ depressive symptoms	378	23.5	1.5000	0.21005	Low anxiety and depression
HADS- anxiety and depressive symptoms	378	39.6	2.3571	0.65060	High anxiety and depression
Kessler_10- psychological distress symptoms	378	36.9	2.2000	0.81349	High Psychological distress

Weighted Average = 2.0190

4.4 Anxiety, Depression, and Distress levels among Lagos State Healthcare Personnel. The findings also shows that a significant percentage of respondents (81.0%), (60.1%), and (87.8%) had extreme severe levels of anxiety, sadness, and distress. The potential of a large psychological influence is identical to past findings, despite differences in the percentages (Table 4.4). And their median levels of anxiety, depression and distress were demonstrated as 28, 36 and 44 accordingly

Table 4.4

Anxiety, Depression, and Distress levels among Lagos State Healthcare Personnel

Level of depression (HADS 1-7)	Frequency	Percent
Moderate	21	5.6
Severe	51	13.5
Extremely severe	306	81.0
Median (IQR)= 36(18)		
Level of anxiety (HADS 8-14)		
Moderate	51	13.5
Severe	100	26.5
Extremely	227	60.1
Median (IQR)= 28(14)		
Level of distress (K-10 score)		
Moderate	20	5.3
Severe	26	6.9
Extremely	332	87.8
Median (IQR)= 44(22)	378	100.0

IQR= Interquartile range, Moderate (score 14=20), Severe (score 21-27), extremely severe (score 28 and above), HADS- Hospital Anxiety Depression Scale, K-10- Kessler Psychological Scale

4.5: Factors Contributing to Psychological Distress and Anxiety amongst HCWs. This investigation looked at the relationships that exist among different socio-demographic variables, and work related experiences and coping mechanism and the respondents' degrees of psychological distress, anxiousness and depression amid COVID-19 outbreak in Nigeria. Results showing a statistical significance threshold of P-value ≤ 0.05 are seen in Table 4.5.

Respondents' level of Psychological distress was shown to vary significantly with years of experience. People with less than 5years job experience were seen to have a higher percentage of extremely severe depression 148(94.3%), (X^2= 15.285; P= 0.004). With chi-square and p-value results of (X^2=8.150, P= 0.017) those showing changes in the copying mechanism adopted were significantly associated with extremely severe levels of Psychological distress. While

extent of distress within age groups, gender, the provision of adequate personal protective gear (PPE) (X^2=4.932, P= 0.05) alongside other variables were not significant (p> 0.05).

Employment status of individual showed a significant association with their anxiety level with a large number of full-time workers exhibiting higher levels of severe and extremely severe anxiety when compared with full-time workers. (75(66.4); X^2= 6.452; P= 0.040).

A large number of females demonstrated a significant level of extremely severe depression 187(79.6%); X^2= 7.1; p= 0.019) even though the males also show a significant level of extreme severe depression but the number of those affected were lower. Depression levels across the categories of age groups, marital status, employment status, those direct or indirect involvements in COVID-19 patient care and other work- related experiences were not significant (p> 0.05).

The study's noteworthy correlations are consistent with results from other research work that has been done across borders. Like for instance, the research reported by Lai et al., (2020) demonstrated the fact woman suffered greater levels of sadness, alongside anxiousness. Spoorthy et al in 2020 also showed a strong correlation between work-related variables and coping strategies. They demonstrated that healthcare personnel faced significant psychological stresses which are caused by variables including work environment and employment position.

Similarly, Pappa and colleagues in 2020 found that healthcare personnel indicated greater extent of anxiousness, sadness and distress notable differences as per socio-demographic variables that include years of experience and gender.

Table 4.5

Factors Contributing to Psychological Distress and Anxiety amongst HCWs

Variable Level of depression	Moderate N (%)	Severe N (%)	Extremely severe N (%)	Total no. of cases	X² (p-value)
Gender					7.91(**0.019**)
Male	2(1.4)	2.2(15.4)	119(83.2)	143	
Female	19(8.4)	29(12.3)	187(79.6)	235	
Work related factors					
Direct or indirect involvement in the care of patients					0.807(0.668)
Yes	17(6.4)	21(8.0)	226(85.6)		
No	3(2.6)	106(73.6)	106(73.6)		
Level of anxiety					
Monthly Income					6.060(0.195)
> 50	8(14.3)	13(23.2)	35(62.5)		
50 – 100	14(11.8)	41(34.5)	64(53.8)		
100,000 <	29(14.4)	45(22.3)	128(63.4)		
Employment states					6.452(0.**040**)
Full time	33(12.5)	80(30.2)	152(57.4)	265	
Part time	18(15.9)	20(17.7)	75(66.4)	113	
Work related experiences and coping mechanism					

How do you cope with the stress of caring for COVID-19 patients					18.146(**0.020**)
Talking to colleagues and friends	19(23.2)	23(28.0)	40(48.8)	82	
Engaging in physical exercise	9(8.3)	27(25.5)	70(66.0)	106	
Taking time off work					
Seeking professional help	12(11.0)	23(21.1)	74(67.9)	109	
	7(11.1)	21(33.3)	35(55.6)	63	
How frequently do you engage in your chosen coping mechanism(s)					30.845(**0.000**)
Daily	13(17.3)	28(37.7)	34(45.3)	**75**	
2 – 3 times a week	14(9.4)	31(20.8)	104(69.8)	149	
1 – 2 times a week	5(5.7)	24(27.6)	58(66.7)	87	
Rarely	19(28.8)	46(24.4)	31(47)	66	
Level of distress					
Years of experience					15.285(**0.004**)
> 5years	5(3.2)	4(2.5)	148(94.3)	157	
5- 10years	10(7.0)	18(12.6)	115(80.4)	143	
10years <	5(6.5)	4(5.2)	68(88.3)	77	
Work related experiences and coping mechanism					
Were you provided with adequate personal protective equipment(PPE)					4.932(0.085)
	15(5.0)	25(8.3)	260(86.7)	300	
Yes	5(6.4)	1(1.3)	72(92.3)	78	
No					
Did you notice any changes in					8.150(**0.017**)

your coping mechanisms dur-

ing the COVID-19 pandemic

Yes	7(3.0)	13(5.6)	212(91.4)	232
No	13(8.9)	13(8.9)	120(82.2)	146

Table 4.5(continued)

N= number of cases, %= percentages of the no. of cases, X^2= Pearson's Chi-square values

Bold values specify statistically significance at p< 0.05.

4.6: Predictors or the risk factors of psychological distress, anxiety alongside depression amongst HCWs in Lagos, Nigeria.

Multiple linear regression analysis was employed in the examination for the predictors of the levels of anxiety, depression, and distress experienced amongst the respondents. Results (Table 4.6) of this analysis indicated that marital status of healthcare personnel is a significant predictor of their depress/anxious levels (AOR= 0.105; p= 0.042) based on the GHQ-12 scale, this showed that single or married can influence the mental state of HCWs. Monthly income also showed a significant effect on depression/anxious levels (AOR=0.105; p=0.000) and this suggests that being stable financially contributes a great deal in the psychological wellness of HCWs. Higher extent of depression/anxiety (AOR=0.047; p=0.028) was significantly predicted by the experiences of verbal and physical abuse encountered by this healthcare personnel, showcasing the harsh influence of horrible work place on mental health. The respondents who noticed changes in their coping mechanisms had a significant association with higher levels of depression/anxiety (AOR=0.047; p=0.002).

Based on the HADS depression scale, monthly income proved to have a significant impact on depression, but the overall p-value (p=0.079) demonstrates that some other factors might be adding to it. The work-related experiences and coping mechanisms were seen to have no effect on depressive state of these respondents.

Respondents' constant contact with infected patients significantly (AOR=0.006; p=0.036) impacts their anxiety levels even though the overall p-value (p=0.27) is not significant which indicates that other variables may be a contributing factor. Another fact notice was that the socio-

demographic characteristics of the respondents were not predictors to the anxiousness experienced by these healthcare personnel.

Monthly income (k-10 scale) had a significant impact on distress levels even though the overall p-value (p=0.110) showed no association. Direct or indirect involvement in covid-19 patient care is also a determinant factor (AOR=0.025; p=0.009) to the high level of distress experienced by this frontline workers. Another predictive factor associated with high distress level is frequency of contact with infected patient (AOR=0.025; p=0.009).

Constantly involved in ones chosen coping mechanism significantly lowers distress levels indicating the importance in consistent stress management policies. The Changes seen in their adopted coping mechanisms is strongly associated to psychological distress levels (AOR=0.025; p=0.004); showing that there is a need for the adoption of an effective coping strategies that will help in normalizing the psychological health of healthcare personnel.

Table 4.6

Predictors of Psychological Distress, Anxiety alongside Depression amongst HCWs in Lagos, Nigeria

Variables	β(standard coefficient)	Adjusted OR	95%Cl Lower-Upper bound	p-value (category)	p-value (ANOVA)
Depression/ anxiety (GHQ-12)					
Marital status	0.123	0.105	0.001-0.074	**0.042**	
					0.000
Monthly income	0.226	0.105	0.031-0.099	**0.000**	
Were you physically assaulted or verbally abused by patients or their relatives during the COVID-19 pandemic	0.119	0.047	0.006-0.102	**0.028**	
					0.001
Did you notice any changes in your coping mechanisms during the COVID-19 pan-	0.166	0.047	0.027-0.116	**0.002**	

demic

Depression (HADS score 1-7)					
Monthly income	0.484	0.016	0.128	**0.026**	
					0.079
Anxiety (HADS score 8-14)					
How frequent did you come in contact with COVID-19 patients?	0.134	0.006	1.252-0.044	**0.036**	
					0.275
Distress (K-10 scale)					
Monthly income	0.146	0.014	3.001-0.242	**0.021**	
					0.110
Were you direct or indirect involvement in the care of patients?	0.172	0.025	0.760-5.329	**0.009**	
					0.032
How frequent did you come in contact with COVID-19 patients?	0.124	0.025	1.947-0.007	**0.048**	
How frequently do you engage in your chosen coping mechanism(s)?	0.121	0.025	0.112-1.864	**0.027**	
Did you notice any changes in your coping mechanisms during the COVID-19 pandemic	0.158	0.025	4.359-0.854	**0.004**	

Table 4.6(continued)

Adjusted for gender, age, marital status, educational status, occupation, years of experience, monthly income, work status, and work related experiences and coping mechanisms.

Bold values indicate levels of significance at p< 0.05.

Hypothesis Declaration: From the result of the overall (ANOVA) p-value of the multiple linear regressions at 95% confidence intervals above, we can develop the hypothesis for this study: The analysis showed a good model fit: (F= 1.783; Adjusted OR= 0.016, p= 0.79).

H_1= Socio-demographic characteristics of HCWs are not significantly associated with depression (HADS), (p= 0.79).

H_1= Work related experiences and coping mechanisms are not significantly associated with anxiety symptoms of HCWs during the Covid-19 outbreak in Nigeria. (p= 0.275).

Alternative Hypothesis; H_0= Socio-demographic factors (e.g. monthly income, marital status), and work related experiences are significantly associated with anxiety/ depressive symptoms (GHQ-12) of HCWs in Nigeria amid the Covid-19 outbreak (p= 0.000).

CHAPTER 5

Discussion

In this cross-sectional investigation, 378 respondents working and residing in the city of Lagos Nigeria amid the Covid-19 pandemic filled the online questionnaire. Majority were female(62.2%), within the age group of 18-35 years(57.4), single, nurses, less than 5years experience, full time employment, and receiving monthly income of more than 100,000 Naira.

The three standardized questionnaire used were tested for reliability and their Cronbach's Alpha levels ranged from 0.671-0.902 for each of them. Using the General hospital questionnaire, Hospital anxiety and depression scaling, and Kessler psychological distress measure, the responders demonstrated having 23% low symptoms of anxiety and depression, 39.6% high indication of anxiety/depression alongside 36.9% having high symptom of psychological distress respectively. With a mean score of 2.4458 in alignment to weighted mean (2.0568), HADS anxiety/depressive symptoms are higher than psychological distress symptoms when measured with the Kessler-10 scale.

More than three-quarter of the respondent had extremely severe levels of depression (81.0%), anxiety and stress. The extents of moderate to extremely severe levels of anxiety were 13.5% to 66.1% accordingly.

When it came to depression, women outperformed men in terms of severity, and those who had direct or indirect involvement in the care of patients with illness also had extremely high levels of depression, (P = 0.668). The result conforms to a study by Spoorthy et al (2020) who also discovered high mental health problem in women and frontline workers. They suggested that this may be as a result of the numerous roles women play in the society in the course of balancing work stress and family life. Healthcare personnel with less than 5years job experience showed a significant extreme severe psychological distress unlike those with 5- 10years and above. This could be as a result that these health personnel are still new to their current work environment trying to fit in before the outbreak of COVID-19 started. Related survey by Iwu et al., (2023), also observed in their study that HCWs with less job experience had a significant moderate level of stress.

A significant association of extremely severe anxiety level was also seen among respondents who worked part-time during the pandemic. Due to fear, worry and stress, some of the frontline workers resort to part-time work. Those who adopted the coping mechanism of taking time off work during the outbreak showed a significant extreme severe anxiety level unlike those who coped by seeking professional help and had a moderate level of anxiety, this shows that the type of coping mechanism adopted could help in lowering psychological issues especially if they sort help from appropriates professionals like the psychologist and psychotherapist. This concurs with study by Cai et al., (2020) on effectiveness of coping mechanism. Respondent who engage 1-2 times a week in their coping mechanisms were seen to have a significant chance of having low to moderate level of anxiety. So engaging in regular stress management schemes makes it easier for one to handle these emotional issues better. Also, healthcare organizations should put in place a suitable type of therapy with the support of a psychologist that will be able to identify their problems and find solutions for these disorders.

The following variables like marital status, monthly income, physically or verbally assaulted by patients or relatives, noticing change in coping mechanism significantly predicted depression/anxiety symptoms in the respondents. Previous investigations (Miller & Grisr-Owens, 2020) have suggested that mutual connections have a significant influence on the psychological state of an individual which can lower ones distress level because of the social security and financial self-sufficiency. A contrary study by Iwu et al., in 2023 found out that gender indicated a significant predictor of depression while marital status was not.

The reliability of the study lies in the fact that standardized questionnaires were used to collect data for the examination of psychological problems encountered by HCWs residing in Lagos state, Nigeria. The number of participants in the study is reasonably strong to give grounds in the explanations of the findings.

Limitations in this study comes from the fact that online questionnaire used for data collection might have introduced solution bias because only HCWs who have access to the internet and were willing to participated and not all would feel comfortable to give an honest answer. Secondly, most of the respondents were female, and nurses, limiting the generalization of the result to all the healthcare workers who were directly or indirectly in the forefront during

the outbreak. Thirdly, failure to prove that those HCWs might have pre-existing psychological health issues before now could also be a bias to the study.

Most of the respondents had to remember their previous experiences during the covid-19 outbreak and their inability to recall exactly what they had been through could also be a bias to the study. The study did not lay emphasis on the different sub-groups of healthcare personnel who participated in this study.

CHAPTER 6

Conclusion and Recommendation

In Nigeria and around the world, healthcare professionals are essential to everyone. So, disregarding their general wellness can make it more difficult for them to fight off crises and disease outbreaks in current times and in the long term. In order to address these issues that contributes to psychological discomfort, such as depression and anxiousness. Health authorities and policy makers should investigate these causes and put treatments in place. In order to manage their emotions and preserve social ties, health care professionals should be encouraged to make use of their current support networks, which include friends, family, and coworkers. This will eventually reduce anxiety.

In this investigation, healthcare workers in Nigeria experienced a high level of psychological distress and anxiety amid the widespread of covid-19 which is a consistent finding from studies conducted among HCWs around the world. Their high psychological issues are highly associated with females, indirectly associated with financial stability, direct contact with infected patients and when physically or verbally abused by patients or their loved ones.

Therefore, there is need to promote the establishment of stress management practices, emphasizing the need to develop and improve emotional and social support programs, and enhance on the existing ones in order to address these emotional problems.

However, studies should be encouraged to investigate the effectiveness of some of these policies to improve psychological wellness of HCWs in Nigeria. In conformity with the findings in this survey, more studies should strongly advise to evaluate the influence of financial state of HCWs in Nigeria on their psychological health especially during outbreaks.

Lastly, in as much as there are online services provided by various psychologist and psychotherapist to help individuals in addressing their emotional wellness, proper awareness ought to be made to educate HCWs of these services. The psychologists' organization should promote trainings in order to develop special skills that will help in the management of epidemics and other unexpected crises.

References

Adams, J. G., Walls, R. M. (2020). Supporting the healthcare workforce during the COVID-19 global epidemic. *Journal of American Medical Association*; 323: 1439–1440.

Adekanmbi, F. P., Ukpere, W. I. (2021). Promoting the mental health of healthcare workers during COVID-19 pandemic: The influence of psychosomatic problems (work-related stress), social support, fear of COVID-19 and demographics. Harvard Deusto Business Research; 10(2): 346-369.

Adedokun, O., and Babalola, G. (2022). Mental health distress during the COVID-19 pandemic in Nigeria: Need for psychological intervention. *South African Journal of Psychiatry*; 28(0): a1550.

Afolabi. (2020). Mental health implications of lockdown during coronavirus pandemic among adult's resident in Ibadan, Nigeria. *African Journal of Social Work*; National Association of Social Workers-Zimbabwe/Author(s), 1563-3934.

Akinbobola, O. I., & Ogunwole, O. B. (2021). Mental health status of healthcare providers during COVID-19 pandemic: Influence of burden of care and work environment. *American Journal of Engineering Research; 9*(3).

Al Mutair, A., Al Mutairi, A., Ambani, Z., Shamsan, A., AlMahmoud, S., & Alhumaid, S. (2021). The impact of COVID-19 pandemic on the level of depression among health care workers: Cross-sectional study. *PeerJ; 9*: e11469.

Andrew, T., Olagunju, Ayodeji A., Bioku, Tinuke O., Olagunju, Foluke O., Sarimiye, Obiora E., Onwuameze, f., Uriel, Halbreich. (2021). Psychological distress and sleep problems in healthcare workers in a developing context during COVID-19 pandemic: Implications for workplace wellbeing. *Progress in Neuro-psychopharmacology & Biological Psychiatry*; 110: 110292.

Badru, O. A., Oloko, K. O., Hassan, A. O, Yusuf, O. B., Abdur-Razaq, U. A., Yakub, S. (2021). Prevalence and correlates of psychological distress amongst healthcare workers during the COVID-19 pandemic: An online survey. *South African Journal of Psychiatry*; 27(0): a1617.

Baud, D., Qi, X., Nielsen-Saines, K., Musso, D., Pomar, L., & Favre, G. (2020). Real estimates of mortality following COVID-19 infection. *Lancet Infectious Diseases*; 20(7): 773.

Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital

Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*; 52(2): 69-77.

Centers for Disease Control and Prevention. (2020). Coronavirus disease 2019 (COVID-19). Retrieved August 6, 2020, from https://www.cdc.gov/coronavirus/2019-ncov/index.html

Chen, Y., Liu, Q., & Guo, D. (2020). Emerging coronaviruses: Genome structure, replication, and pathogenesis. *Journal of Medical Virology*; 92(4): 418-423.

Chirico, F., Ferrari, G., Nucera, G., Szarpak, L., Crescenzo, P., & Ilesanmi, O. (2021). Prevalence of anxiety, depression, burnout syndrome, and mental health disorders among healthcare workers during the COVID-19 pandemic: A rapid umbrella review of systematic reviews. *Journal of Health and Social Sciences*; 6(2): 209-220.

Consolata Uzzi, Bolaji Yoade, Victoria Iyanu Olateju, Mary Olowere, Gibson Anugwom, Mathew Owolabi, Alexsandra Urhi, Hafiz Olatunde, Fasina Feyikemi, Oluwafemi Akinbode, Dolly Ogwu, & Funso, Oladunjoye. (2021). Effect of COVID-19 on the mental health of healthcare workers. *Journal of Advances in Medicine and Medical Research*; 33(21): 183-194.

Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Derogatis, L. R., Lipman, R. S., & Covi, L. (1977). Symptom checklist-90 (SCL-90): Administration, scoring and procedures manual-I for the revised version. Clinical Psychometric Research. And Erinoso, O. A. (1996). Psychometric properties of the Symptom Distress Checklist-90 (SCL-90) in a Nigerian sample. *Journal of Psychology in Africa*; 6(1): 43-50.

Devakumar, D., Shannon, G., Bhopal, S. S., Abubakar, I. (2020). Racism and discrimination in COVID-19 responses. The Lancet; 395(10231): 1194.

Dhaka-Tribune. Bangladesh sees 100th death of doctors from Covid-19. Kazi Anis Ahmed. Dhaka: Bangladesh (2020).

Drapeau, A., Marchand, A., & Beaulieu-Prévost, D. (2012). Epidemiology of psychological distress. In Mental illnesses: Understanding, prediction, and control; 105-110. InTech. https://doi.org/10.5772/30872

Ejemot-Nwadiaro, R. I., Ehiri, J. E., Arikpo, D., Meremikwu, M. M., Critchley, J. A., & Handforth, K. (2020). Hand hygiene promotion for preventing COVID-19. Cochrane Database of Systematic Reviews; 9(9): CD012353.

Fischer, L. S., Mansergh, G., Lynch, J., & Santibanez, S. (2020). Addressing Disparities in Influenza and COVID-19 Vaccination Coverage among US Adults: Challenges and Solutions. *Clinical Infectious Diseases*; 72(5): 819–826.

Fowlkes, A,, Gaglani, M., Groover, K., et al. (2021). Effectiveness of COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Frontline Workers Before and During B.1.617.2 (Delta) Variant Predominance - Eight U.S. Locations, December 2020–August 2021. MMWR Morb Mortal Wkly Rep 2021; 70: 1167-1169.

Gbenga-Epebinu, M. A., Ayorinde, A. M., Olaitan, O. T., and Osagie, J. T. (2022) Qualitative Analysis of Quality of Life of Frontline Health Care Workers During Covid-19 Pandemic in Lagos State, *International Journal of Ebola, AIDS, HIV and Infectious Diseases and Immunity*; 7(2): 9-16.

Greenberg, N., Docherty, M., Gnanapragasam, S., & Wessely, S. (2020). Managing mental health challenges faced by healthcare workers during Covid-19 pandemic, *British Medical Journal*; 368: m1211.

Hamed Taherdoost. (2021). Data Collection Methods and Tools for Research: A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Project. *International Journal of Academic Research in Management*; 10(1): 2296-1747.

Hamza Rafique Khan, Farzana Ashraf, Irfan Ullah, Muhammad Junaid Tahir, Asimina Dominari, Sheikh Shoib, Hamna Naeem, Gowry Reddy, Pramit Mukherjee, Ifrah Akram, Sudha Kamada, Roshni Riaz Memon, M. Muzzamil Yasin Khan, Sumit Raut, Mahmoud Mohamed Mohamed Shalaby, Rana Usman Anwar, Maheen Farooq, Krupa Ketankumar Soparia, Rodrigo Ramalho, Chung-Ying Lin, and Amir H. Pakpour Ph.D. (2021), Cross-cultural prevalence of sleep quality and psychological distress in healthcare workers during COVID-19 pandemic; 11: e2383.

Ibigbami, O. I., Akinsulore, A., Opakunle, T., Seun-Fadipe, C., Oginni, O. A., Okorie, V. O., Oloniniyi, I., Olibamoyo, O., Aloba, O. O., Mapayi, B., & Adewuya, A. (2022). Psychological Distress, Anxiety, Depression, and Associated Factors among Nigerian Healthcare Workers during COVID-19 Pandemic: A Cross-Sectional Study. *International Journal of Public Health;* 67:1604835.

Ilesanmi, O. S., Alele, F. O., & Abiola, T. (2020). Knowledge, attitude, and perceived preparedness towards COVID-19 prevention among healthcare workers in a tertiary

health institution in South-Western Nigeria. *Journal of Multidisciplinary Healthcare*; 13: 1377-1384.

Imishue, O. T., Ogunkoya, J. O., Jagun, O., Ladele, A. E., & Betiku, A. (2023). Assessment of the Quality of Life of Healthcare Workers in Nigeria during the COVID-19 Pandemic. *European Journal of Applied Sciences*; 11(2): 251-259.

Iwu, C. A., Aguocha, C., Ositadinma, P., Chibiko, V., Uwakwe, K. (2023). Covid-19 Pandemic and Its Psychological Effects on Health Care Workers in a Socio-Economically Challenged Environment; A Cross-Sectional Analytical Study. *International Journal of Psychiatry*; 8(2): 29-39.

Jain, U. (2020). Risk of COVID-19 due to Shortage of Personal Protective Equipment. *Cureus*; 12(6): e8837.

Jombo, H. E., Ekwere, T. A., Umoh, V. A., Ndionuka, N. F., & Akpan, E. E. (2021). The psychological impact of COVID-19 disease on nurses in two tertiary healthcare centers in Akwa Ibom State, Nigeria. International Journal of Community Medicine and Public Health; 8(3), 1037-1042.

Joob, B., & Wiwanitkit, V. (2020). Traumatization in medical staff helping with COVID-19 control. *Brain Behav Immun*; 87: 10.

Kafle, K., Shrestha, D. B., Baniya, A., Lamichhane, S., Shahi, M., Gurung, B., & others. (2021). Distress among health service providers during COVID-19 pandemic in Nepal. PLOS One; 16, e0246784.

Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., Yang, B. X., Wang, Y., Hu, J., Lai, J., Ma. X., Chen, J., Guan, L., Wang, G., Ma, H., & Liu, Z. (2020). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatry*. 2020 Mar; 7(3): e14.

Kavanagh, M. M., Erondu, N. A., Tomori, O., Dzau, V. J., Okiro, E. A., Maleche, A., ... & Walensky, R. P. (2021). Access to lifesaving medical resources for African countries: COVID-19 testing and response, ethics, and politics. *The Lancet*, 397(10278), 1575-1577.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., ... & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*; 32(6): 959-976.

Koinis, A., Giannou, V., Drantaki, V., Angelaina, S., Stratou, E., & Saridi, M. (2015). The impact of healthcare workers job environment on their mental-emotional health. Coping strategies: The case of a local general hospital. *Health Psychological Research*; 3(1): 1984.

Krishnan, A., Hamilton, J. P., Alqahtani, S. A., & Woreta T. (2021). A narrative review of coronavirus disease 2019 (COVID-19): clinical, epidemiological characteristics, and systemic manifestations. *Internal and Emergency Medicine*; 16(4): 815-830.

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., and Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *Journal of American Medical Association,* Network Open; 3(3): e203976.

Li, C., & Ahlstrom, D. (2015). Development and validation of the Emotional Stability Scale (ESS): Personality and Individual Differences; 85: 165-170.

Maslach, C., & Jackson, S. E. (1986). Maslach Burnout Inventory (MBI). Consulting Psychologists Press.

Murray, C. J. L., Piot, P., & Pandemic Response Working Group of the Lancet COVID-19 Commission. (2020). The Global Response to the COVID-19 Pandemic: How Have National Health Systems Adapt.

Nazarpour, S., Simbar, M., Ramezani Tehrani, F., & Alavi Majd, H. (2018). Quality of life and sexual function in postmenopausal women. *Journal of Women & Aging*, 30(4), 299–309.

Ndubuisi Mokogwu. (2022), Psychological challenges and coping strategies of quarantined healthcare workers exposed to confirmed COVID-19 cases in a tertiary hospital in Edo state. *Journal of the pan African Thoracic Society; 3: 1-7.*

Ndulue, C., Okunola, O. O., Olaolu, O., Fatiregun, A. A., Oluwole, E., Adelakun, A. O., & Olugbodi, A. O. (2020). Knowledge, attitudes, and practices of Nigerian health workers toward COVID-19: An online cross-sectional study. *Journal of Community Health; 1-9.*

Newby, J. M., O'Moore, K., Tang, S., Christensen, H., & Faasse, K. (2020). Acute mental health responses during the COVID-19 pandemic in Australia. *PLOS ONE, 15*(7), e0236562.

Nri-Ezedi Chisom Adaobi, Chioma Phyllis Nnamani, Nonye Ijeoma Ezeh, Chioma Okechukwu, Oluwatoyin Fasesan, and Thomas Obiajulu Ulasi. (2020). Psychological Distress among Residents in Nigeria during the COVID-19 Pandemic. *International Neuropsychiatric Disease Journal*; 14(3): 8-21.

Ochei, A., Awosan, K.J., Oche, M.O., Raji, M.O., Nwobodo, H.A., Madu, S.J., Ango, J.T., & Akpede, G.O. (2020). Prevalence and factors associated with psychological distress among frontline healthcare workers during the COVID-19 pandemic in Sokoto State, Nigeria. Annals of African Medicine, 19(3), 200-206.

Odikpo, L. C., Abazie, H. O., Emon, D., Mobolaji-Olajide, M. O., Gbahabo, D. D., & Musa-Malikki, A. (2021). Knowledge and reasons for anxiety among nurses towards COVID-19 disease in Nigeria. *African Journal of Infectious Diseases*; 15(2): 16-23.

Okechukwu Dominic Nwankwo, and Obed Kwantoh Moneme. (2020). Life distress and work burnout as predictors of organizational reactions and social-emotional stability of nurses in eastern Nigeria (implications for COVID-19 healthcare givers/providers). *International Journal of Nursing, Midwife and Health Related Cases;* 6(2): 1-28.

Olude, O. A., Odeyemi, K., Kanma-Okafor, O. J., Badru, O. A., Bashir, S. A., Olusegun, J. O., & Atilola, O. (2022). Mental health status of doctors and nurses in a Nigerian tertiary hospital: A COVID-19 experience. *South African Journal of Psychiatry*; 28:1904.

Ornell, F., Halpern, S. C., Kessler, F. H. P., & Narvaez, J. C. M. (2020). The impact of the COVID-19 pandemic on the mental health of healthcare professionals. Cad Saude Publica; 36(4): e00063520.

Otu, A., Ameh, S., Osifo-Dawodu, E., Alade, E., Ekuri, S., & Idris, J. (2017). An account of the Ebola virus disease outbreak in Nigeria: implications and lessons learnt. BMC Public Health; 18(1): 3.

Paladino, L., Sharpe, R. P., Galwankar, S. C., & others. (2017). Reflections on the Ebola public health emergency of international concern, part 2: The unseen epidemic of posttraumatic stress among healthcare personnel and survivors of the 2014–2016 Ebola outbreaks. *Journal of Global Infectious Disease,* 9(2), 45-50.

Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsi, E., and Katsaounou, P. (2020), Prevalence of depression, anxiety, and insomnia among healthcare workers during the

COVID-19 pandemic: a systematic review and meta-analysis. *Brain, Behavior, and Immunity*. 05.026.

Qiongni Chen, Mining Liang, Yamin Li, Jincai Guo, Dongxue Fei, Ling Wang, Li He, Caihua Sheng, Yiwen Cai, Xiaojuan Li, Jianjian Wang, & Zhanzhou Zhang. (2020). Mental health care for medical staff in China during the COVID-19 outbreak. *The Lancet Psychiatry*; 7(4): e15-e16.

Quill, T. E., & Abernethy, A. P. (2013). Generalist plus specialist palliative care--creating a more sustainable model. *N Engl J Med*; 368(13): 1173-5.

Razu, S. R., Yasmin, T., Arif, T. B., Islam, M. S., Islam, S.M. S., Gesesew, H. A., & Ward, P. (2021). Challenges Faced by Healthcare Professionals During the COVID-19 Pandemic: A Qualitative Inquiry From Bangladesh. *Front Public Health*; 9:647315.

Shaimaa Ahmed, Mohamed Asmaa, Abdullah Anas, & Maha Anani (2021), Mental Stress, Anxiety and Depressive Symptoms and Interleuken-6 Level among Healthcare Workers during the COVID-19 Pandemic. *Journal of Primary Care & Community Health;* 12: 1–8.

Silva-Junior, J. S., Cunha, A. A., Lourenção, D. C., Silva, S. M., Silva, R. F., Faria, M. G., et al. (2021), Occupational psychosocial stressors and mental distress among healthcare workers during the COVID-19 pandemic. Einstein (São Paulo); 19:eAO6281.

Sonuga Tolulope Abolore, and Aina Joseph Oyeneyi (2021). The Level of Fear, Depression, And Coping Strategies Among Frontline Healthcare Workers in Two Covid-19 Isolation Centers, Lagos - State, Nigeria. *International Journal of Medicine, Nursing & Health Sciences; 2(2): 213-225.*

Spoorthy, M. S., Pratapa, S.K., and Mahant, S. (2020). Mental Health Problems Faced by Healthcare Workers Due to the COVID-19 Pandemic: A Review. *Asian Journal of Psychiatry*; 51: 102119.

Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., Wang, H., Wang, C., Wang, Z., You, Y., Liu, S., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control*; 48(6): 592-598.

Tandon, R. (2020). COVID-19 and mental health: Preserving humanity, maintaining sanity, and promoting health. *Asian Journal of Psychiatry*; 51: 102256.

Trochim, W. M. K., and Donnelly, J. P. (2008) The Research Methods Knowledge Base. 3rd Edition, Atomic Dog, Mason, 56-65.

Taquet, M., Geddes, J. R., Husain, M., Luciano, S., & Harrison, P. J. (2021). 6-month neurological and psychiatric outcomes in 236,379 survivors of COVID-19: A retrospective cohort study using electronic health records. *The Lancet Psychiatry, 8*(5): 416-427.

Vincent, J. L., & Creteur, J. (2020). Ethical aspects of the COVID-19 crisis: How to deal with an overwhelming shortage of acute beds. *European Heart Journal: Acute Cardiovascular Care*; 9(3): 248-252.

Violeta Zefi, Denis Celcima, & Vjollca Pllana Shahini (2022), Psychological distress among healthcare workers during the Covid-19 in Kosovo.

World Health Organization. (2021). COVID-19 situation reports. Retrieved April 5, 2021, from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*; 7(3): 228-229.

Yildirim, T. T., Atas, O., Asafov, A., Yildirim, K., and Balibey, H. (2020). Psychological status of healthcare workers during the COVID-19 pandemic. *Journal of College Physicians Surgeons Pakistan*; 30: S26-S31.

Zhang Jiang, Dong Lei, Zhang Yanbo, Chen Xinyue, Yao Guiqing, & Han Zhangang. (2020). Investigating time, strength, and duration of measures in controlling the spread of COVID-19 using a networked meta-population model. Nonlinear Dynamics; 101(3):1789-1800.

QESTIONNAIRE

This questionnaire was developed by Ijeoma Pamela Nwosu, a master's student of Bio-statistics department in order to collect primary data for my thesis with the above tittle so as to obtain information which could not be gotten by secondary data and to have the validation of the study result. I promise that data gotten will be used for academic purposes only.

Informed Consent Form for Participants

Dear participants, I would like to assess the PSYCHOLOGICAL DISTRESS AND ANXIETY LEVEL AMONG HEALTHCARE WORKERS IN LAGOS STATE, NIGERIA DURING COVID-19 PANDEMIC using a descriptive cross-sectional survey. Your response will be kept confidential and will not be used for purposes other than the current scientific research. I would like to thank you in advance for participating in this study and for providing your answers honestly.

Participant Consent:

□ I would like to participate: □ I do not want to participate

SECTION 1: DEMOGRAPHIC INFORMATION

1. Age: 18 – 35, 36-45, 46-55, 56 and above years

2. Gender: Male / Female / Other (please specify)

3. Marital Status: Single / Married / Divorced / Widowed

4. Educational level: Primary school / Secondary school / Tertiary (University, Polytechnic, College of Education)

5. Occupation: Doctor / Nurse / Allied Health Professional (please specify)

6. Years of experience: Less than 5 years, 5- 10, more than 10 years

7. Employment status: Full-time / Part-time

8. Monthly income: less than 50,000 Naira, 50,000 - 100,000 Naira, 100,000 Naira and above.

SECTION 2: WORK-RELATED FACTORS

1. Have you been involved in the care of COVID-19 patients? Yes / No

2. How frequently do you come in contact with COVID-19 patients?

   a) Daily b) 2-3 times a week c) 1-2 times a week d) Rarely

3. Have you received adequate training on infection prevention and control measures for COVID-19? Yes / No

4. Have you been provided with adequate personal protective equipment (PPE) to use when caring for COVID-19 patients? Yes / No

5. Are you satisfied with the measures put in place by your employer to protect you from COVID-19 infection? Yes / No

6. Have you been physically assaulted or verbally abused by patients or their relatives during the COVID-19 pandemic? Yes / No

   COPING MECHANISMS

7. How do you cope with the stress of caring for COVID-19 patients? a) Talking to colleagues and friends b) Engaging in physical exercise or relaxation techniques (e.g., yoga, meditation)

8. c) Taking time off work d) Seeking professional help (e.g., counseling) e) others (please specify)

9. How frequently do you engage in your chosen coping mechanism(s)? a) Daily b) 2-3 times a week c) 1-2 times a week d) Rarely

10. Have you noticed any changes in your coping mechanisms during the COVID-19 pandemic? Yes / No

SECTION 3: General Health Questionnaire-12 (GHQ-12)

1. During the past few weeks, have you been able to concentrate on whatever you're doing? Yes / No

2. Have you recently felt that you were playing a useful part in things? Yes / No

3. Have you recently felt capable of making decisions about things? Yes / No

4. Have you recently felt that you were enjoying your normal day-to-day activities? Yes / No

5. Have you recently felt that you had lost interest in your normal day-to-day activities? Yes / No

6. Have you recently felt that you were under constant strain? Yes / No

7. Have you recently felt that you couldn't overcome your difficulties? Yes / No

8. Have you recently felt that you were close to breaking down? Yes / No

9. Have you recently felt that you were unhappy and depressed? Yes / No

10. Have you recently felt that you were losing confidence in yourself? Yes / No

11. Have you recently felt that you were thinking of yourself as a worthless person? Yes / No

12. Have you recently felt that life is not worth living? Yes / No

SECTION 4: Hospital Anxiety and Depression Scale (HADS)

Please click that if your answer is; Not at all (1), usually/ most times (2), occasionally/ some-times (3), Quite often (4), definitely (5)

1. I feel tense or 'wound up':

2. I still enjoy the things I used to enjoy:

3. I get a sort of frightened feeling as if something awful is about to happen:

4. I feel as if I am slowed down:

5. Worrying thoughts go through my mind:

6. I can sit at ease and feel relaxed:

7. I get a sort of frightened feeling like butterflies in the stomach:

8. I feel restless as if I have to be on the move:

9. I get sudden feelings of panic:

10. I can laugh and see the funny side of things:

11. I have lost interest in my appearance:

12. I can enjoy a good book or radio or TV program:

13. I feel cheerful:

14. I look forward with enjoyment to things::

SECTION 5: Kessler psychological distress (K-10) scale.

Please click that if your answer is; Never (1), Almost never (2), Sometimes (3), Fairly often (4), Very often (5)

In the past months, how often have you felt:

1. Unable to control important things in your life?

2. Confident in your ability to handle personal problems?

3. Things were going your way?

4. Overwhelmed by difficulties?

5. Stressed?

6. That you were on top of things?

7. Upset because of something that happened unexpectedly?

8. Unable to cope with all the things you had to do?

9. Able to control irritations in your life?

10. Felt that you were unable to cope with things?

Thank you for your participation.

TURNITIN REPORT

MSc THESIS

ORİJİNALLİK RAPORU

%**19**
BENZERLİK ENDEKSİ

%18
İNTERNET KAYNAKLARI

%14
YAYINLAR

%14
ÖĞRENCİ ÖDEVLERİ

BİRİNCİL KAYNAKLAR

1	peerj.com İnternet Kaynağı	%1
2	docs.neu.edu.tr İnternet Kaynağı	%1
3	www.researchgate.net İnternet Kaynağı	%1
4	ir.ucc.edu.gh İnternet Kaynağı	<%1
5	www.scienceopen.com İnternet Kaynağı	<%1
6	Submitted to University of Dundee Öğrenci Ödevi	<%1
7	Submitted to Yakın Doğu Üniversitesi Öğrenci Ödevi	<%1
8	Submitted to Roanoke College Öğrenci Ödevi	<%1
9	www.medrxiv.org İnternet Kaynağı	<%1