

**COVID – 19 PANDEMIC EFFECTS ON THE MENTAL
HEALTHCARE SERVICE DELIVERY AT BUTABIKA NATIONAL
REFERRAL HOSPITAL, UGANDA**

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DECLARATION

I, Otai James declare that this dissertation is my original work and has not been presented for a degree in any other University

Signed: _____ **Date:** _____

APPROVAL

We confirm that the work in this dissertation was done by the candidate under our supervision and here by recommend the dissertation for acceptance to be examined by the Directorate of Research and Graduate Training of Kyambogo University

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DEDICATION

This dissertation is dedicated to my family members and my research supervisor for the Moral and Financial support they rendered to me during the study.

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LIST OF ABBREVIATION AND ACRONYMS

ANC:	Antenatal Care
COVID 19:	Corona Virus Disease 2019
GAD:	Generalised Anxiety Disorder
HCP:	Health Care Practitioner
MDD:	Moderate Depression Disorder
OPD:	Out Patient Department
PHQ:	Patient Health Questionnaire
PPE:	Personal Protective Equipment
PSS:	Perceived Stress Scale
PTSD:	Post-Traumatic Stress Disorder
SARS:	Severe Acute Respiratory Syndrome
SD:	Standard Deviation
WHO:	World Health Organisation

DEFINITION OF KEY TERMS

Mental health

A person's psychological and emotional well-being

Health care provider

A person, who is licensed to provide health-care diagnostic and treatment services, such as medicine, surgery, and medical services, is known as a physician assistant.

Psychological distress

This is the non-specific stress, anxiety, and depression symptoms.

ABSTRACT

A global catastrophe impacting many areas of society, including health, social welfare, and the environment, was brought on by the COVID-19 pandemic. The psychiatric and mental health care systems, which were already overburdened for years, saw an unprecedented amount of strain as a result of the health catastrophe that preceded this epidemic. This study was aimed at finding the COVID – 19 pandemic effects on the mental healthcare service delivery at Butabika National Referral Hospital. A cross-sectional design with both quantitative and qualitative approaches was used to collect information at the health facility. A total of 198 hospital staff participated in the study. Pre – tested structured questionnaires, interview guides were used to collect information from the hospital staff that consented to take part voluntarily in the study while document review was used to collect patients' information on trends of mental health service utilisation. The findings of the study showed that there was a decrease in the number of appointments for the mental health services and an increase of patients on treatment during the pandemic. The prevalence of psychometric disorders at the facility was moderate to high stress 91.9%, minimal anxiety 65.2% and likely depression 63.8%. The doctors and clinicians had higher stress levels than the other staff. There was a positive significant relationship between quality of life and service delivery ($r = 0.576^{**}$, $p < 0.01$). Fear of contracting COVID-19 at health facilities, transportation difficulties, shortage of human resource and restricted movement were the major challenges that hindered services delivery during the pandemic. There is need for government to train health workers on remote technologies, enhance mental health support, combat misinformation, and boost funding to strengthen resilience and access to care during and after crises.

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CHAPTER ONE: INTRODUCTION

1.1 Background

The Corona Virus Disease 2019 (COVID-19) pandemic has set off a worldwide catastrophe that is impacting a multitude of domains, such as health, social welfare, and society (Kuzman et al., 2021), as well as services including immunisation, diabetes, hypertension, and general Outpatient Department (OPD) (Tumwesigye et al., 2021). Wuhan reported the first instances of COVID-19, or coronavirus illness 2019, and the cause was the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (El Gindi et al., 2022), Hubei Province, China, between December 2019 and January 2020 (Wang et al., 2020). The World Health Organisation declared COVID-19 a worldwide public health emergency in February 2020 because it spread so swiftly around the world (Li et al., 2020; Anzola et al., 2022). The WHO declared COVID-19 a global pandemic on March 11, 2020 (Gourret et al., 2021) after the number of cases reached over 100,000 by the first week of March 2020, affecting multiple continents. By March 2022, 8,111,689 confirmed cases and 169,460 deaths in Africa had occurred (Shigemura et al., 2020). The mental health and psychiatric services are already overworked and overwhelmed after years of neglect, are under unprecedented strain due to the health crises that has followed this epidemic (Petho, 2008).

The Ugandan government put public health procedures in place to halt the spread of COVID-19 beginning in early March 2020. These included work-from-home mandates, border closures, school and childcare closures, physical distancing, restrictions on group gatherings, and travel restrictions (Chevance

et al., 2020; Garringa et al., 2020). Additionally, non-essential health and public services were temporarily suspended (Vogel, 2020). While these precautions were successful in avoiding illness, they also created additional difficulties and increased population pressure. This has been particularly true for people with pre-existing mental health issues, which are made worse by the challenges associated with accessing care (Alavi et al., 2020). In this instance, the healthcare system must continue to treat a cohort of COVID-19 patients while also offering non-COVID treatment. Hospitals were facing a major difficulty as a result of the sharp rise in patients on waiting lists since the pandemic's start. As a result of infection prevention and control efforts, hospitals were running at decreased capacity (Department of Health and HSE, 2021).

Because the pandemic was linked to a markedly increased demand for mental health services, the World Health Organisation (WHO) declared that mental health services should be considered one of the essential health services to be maintained for different population levels throughout the COVID-19 health crisis (Kuzman et al., 2021; Fiorillo & Gorwood, 2020; Moreno et al., 2020). Since many patients rely on mental health for symptom management, access to healthcare services is particularly more important during the pandemic (Li et al., 2021). In order to deliver mental healthcare to those who need it most while avoiding COVID-19 exposures, many healthcare practitioners have resorted to telehealth as an efficient solution to bridge the physical gap between patients and healthcare providers (Li et al., 2021). The phrase "telehealth" describes the use of technology through audio and video telecommunications to provide healthcare over long distances, facilitate

information sharing between healthcare professionals, or provide healthcare in circumstances when face-to-face interaction is impractical (Malhorta et al., 2020). The term "tele-psychiatry" describes the use of these methods in the field of mental health (Di Carlo et al., 2021). Although telepsychiatry is not a novel idea, it was not a widely used technique before the pandemic (Li et al., 2021).

Even prior to the COVID-19 pandemic, the incidence of mental health issues among HCPs was greater than that of non-healthcare workers (Dutheil et al., 2019). Health facilities, institutions, and professionals have had to modify their procedures and structures due to the COVID-19 health crisis (Thome et al., 2020). Early in the health crisis, a number of steps were taken to guarantee continuity of treatment and address the additional demands brought on by the situation, all the while lowering the danger of SARS-CoV-2 transmission (Alavi et al., 2020). This circumstance has led to unprecedented levels of utilisation of digital technology, especially telemedicine tools (Crowe et al., 2020). In this unique and anxiety-inducing scenario, the population's need for treatment has confronted psychiatric and mental health professionals with a variety of obstacles, including maintaining regular preventative measures while guaranteeing continuity of care for both inpatients and outpatients (Gourret et al., 2021). Health care professionals' (HCPs) circumstances have been made worse by the additional social and work-related stressors brought on by COVID-19 (Li et al., 2020). According to reports, the complexity and difficulties that HCPs encountered during the pandemic (Cook et al., 2020) had a detrimental effect on their mental health (Greenberg et al., 2021). HCPs

were shown to have burnout and higher than average levels of stress, anxiety, and depression (Nishimura et al., 2021; Tan et al., 2020).

However, questions have been raised over the accessibility of sufficient services during the pandemic (Holmes et al., 2020). Moreover, due to the virus's increased ability to propagate, psychiatric hospitals housing patients with long-term mental health issues were especially susceptible to contracting the COVID-19 pandemic (Shah et al., 2020). Psychiatric services have been reduced to emergency care in the majority of countries. The few services that remain almost naturally switch from traditional in-person services to remote services (such as using various video platforms or phone services) as the only option (Kuzman et al., 2021). Conversely, preliminary studies conducted in secondary care suggest that mental health services are mostly steady (Stewart, Martin, & Broadbent, 2020). However, mental health professionals deal with issues such a lack of staff, changing the way services are provided, and the strain of putting infection control procedures into place (Johnson et al., 2020). Few things are known about how vulnerable populations, in particular, may receive mental health care and how this has affected the treatment of present patients in medical facilities (Bauer-Staeb et al., 2020). The study's goal was to evaluate the pandemic's effects on healthcare providers' mental health and psychiatric service delivery at Butabika national referral hospital.

1.2 Problem statement

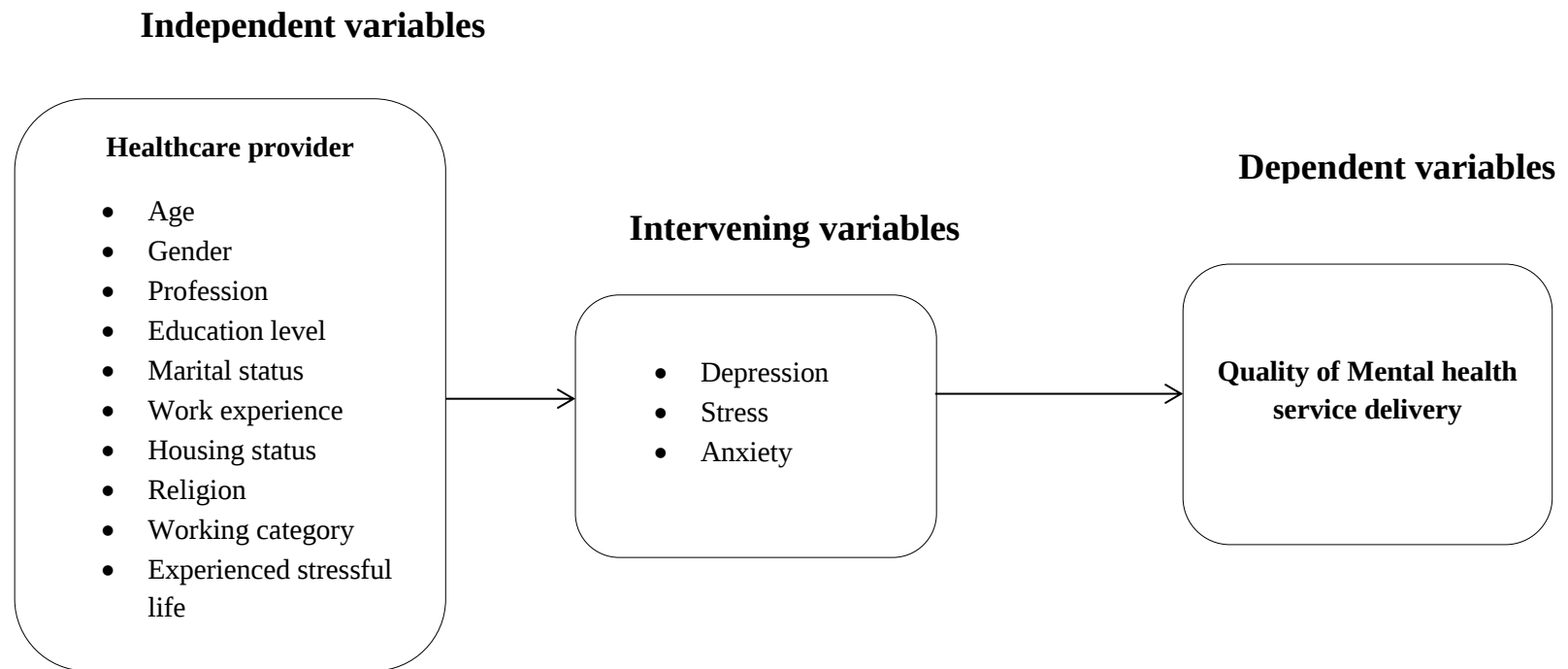
The COVID-19 pandemic has severely disrupted the provision of mental healthcare services, leading to a significant decline in the quality and accessibility of care, particularly for psychiatric patients. Ideally, mental healthcare services should be uninterrupted, accessible, and of high quality,

ensuring that patients receive timely and appropriate care regardless of external challenges. However, the reality at Butabika National Referral Hospital reflects a deteriorated service environment characterized by limited access to in-person consultations, increased reliance on remote care methods, and heightened stress and burnout among healthcare personnel. Before the pandemic, the hospital admitted fewer than 900 patients annually, but by September 2020, it had treated 1,500 patients, with more recent reports indicating a surge to 10,300 patients, many of whom were youths under 17 years. This influx has resulted in the hospital operating at nearly double its designed capacity of 550 beds (Independent, 2020). Infection prevention and control measures such as lockdowns, self-isolation, and restricted movement not only limited access to care but also exacerbated mental health issues for both patients and healthcare providers.

Healthcare workers at Butabika faced the dual challenge of managing COVID-19 cases while continuing to provide essential psychiatric services, often with inadequate resources and support. This situation was further complicated by the limited availability of personal protective equipment (PPE), insufficient mental health support for healthcare staff, and disruptions in the supply of psychiatric medications. Preliminary reports suggest increased instances of relapse among psychiatric patients due to interrupted treatment and the inability of some patients to adapt to remote consultations. Additionally, there is limited data on the extent to which psychiatric patients had access to mental healthcare and the effectiveness of the strategies employed by healthcare providers during the pandemic.

Therefore, this study aims to examine the impact of the COVID-19 pandemic on the mental health of healthcare personnel and the delivery of psychiatric services at Butabika National Referral Hospital. It seeks to provide evidence-based insights into the challenges faced and to inform strategies for enhancing the resilience and responsiveness of mental healthcare services during and beyond pandemic conditions.

1.3 Conceptual framework



Source: Personally developed

Figure 1.1: Conceptual framework

Narrative

The mental health of psychiatric health workers and service delivery to the patients could be affected by specific factors like COVID 19 lockdown, lack of Personal Protective Equipment (PPE) to use, restricted access to health facilities bringing about depression, anxiety and stress to the health workers and effect to access of health services and Information and communication given to patients.

1.4 Objectives of the study

1.4.1 Main objective

To assess the effects of COVID – 19 pandemic on the mental health of healthcare providers and psychiatric service delivery at Butabika National Referral Hospital

1.4.2 Specific objectives

- i. Determine the level of psychiatric service delivery during the COVID 19 pandemic.
- ii. Examine the levels of stress, anxiety and depression among psychiatric healthcare workers during the COVID 19 pandemic.
- iii. Document the social challenges faced in healthcare service delivery by healthcare workers as a result of the COVID 19 pandemic at Butabika national referral hospital.

1.5 Hypothesis

H0₁: There was no significant difference in the level of service delivery to psychiatric services at Butabika National Referral Hospital during the COVID-19 pandemic.

H0₂: There is no significant difference in quality of life and service delivery of the health care workers during the COVID 19 pandemic.

H0₃: There is no significant difference in the challenges faced in the healthcare service delivery by healthcare workers during the COVID 19 pandemic at Butabika national referral hospital.

1.6 Scope of the study

1.6.1 Geographical scope

The study took place at Butabika National Referral Hospital. The hospital is Uganda's sole National Referral Psychiatric Facility. Butabika is situated on the northern shores of Lake Victoria, the largest freshwater lake in Africa. By road, this place is about 10.5 kilometers (6.5 miles) east of Kampala's core business center. Mulago National Referral Hospital is around 12.5 kilometers (8 miles) southeast of Butabika Hospital. Butabika Hospital is located at 0°18'57.0"N, 32°39'33.0"E. (latitude: 0.315845 and longitude: 32.659160).

1.6.2 Content scope

The study was aimed at establishing changes in the monthly number of patients who received services (in –person, tele – psychiatry, or non – attended to persons) during the epidemic of COVID 19. It was also intended to find out

the healthcare workers social demographic characteristics and relate them to their quality of life.

1.6.3 Time scope

The data collection was done out for two months. This study period was significant in that it enabled the researcher to collect data, for analysis.

1.7 Justification of the study

Psychiatry, as a branch of medicine, has historically focused on diagnosing, treating, and preventing mental health disorders through a range of healthcare services, including psychotherapy, medication management, and rehabilitation. Ideally, psychiatric patients were expected to receive comprehensive care that addressed both their immediate symptoms and long-term well-being, ensuring regular access to consultations, continuous medication supply, and psychosocial support. However, the outbreak of the COVID-19 pandemic severely disrupted these services, leading to limited access to in-person consultations, medication shortages, and increased reliance on remote care methods. Healthcare workers, already facing challenging conditions, had to continue treating both COVID-19-related and non-COVID-19-related patients, including those with psychiatric conditions, despite the immense strain on their psychosocial functioning.

During the pandemic, healthcare employees experienced heightened levels of stress, anxiety, and burnout due to increased workloads, fear of infection, inadequate protective resources, and the psychological burden of managing severely ill patients. These challenges compromised their ability to deliver high-quality psychiatric care. Understanding the extent of stress and other

psychological disorders faced by healthcare workers during this period was crucial for hospital administrators to develop effective support systems and policies. The goal of this study was to provide evidence-based insights into the stress levels and mental health challenges encountered by healthcare personnel at Butabika National Referral Hospital after the COVID-19 period, offering recommendations to enhance the delivery of psychiatric services even amidst on-going pandemic conditions.

By identifying specific stressors and evaluating their impact on service delivery, this study aimed to inform hospital administrators and policymakers about targeted interventions needed to support healthcare workers and improve psychiatric care outcomes. The findings were intended to influence policy reforms that could lead to improved mental healthcare delivery at health institutions in Kampala and, by extension, Uganda. Such improvements were expected to reduce mortality and morbidity associated with mental health issues, fostering positive social change by ensuring that psychiatric patients received uninterrupted and high-quality care despite the challenges posed by the pandemic.

CHAPTER TWO: LITERATURE REVIEW

2.1 Mental health

Mental Health (2016) defines mental health as a condition of well-being in which a person is able to see their own potential, effectively handle day-to-day stressors, work effectively, and positively impact their society. Conversely, mental disorders are disruptions in a person's mental state that are frequently typified by a confluence of uncomfortable ideas, emotions, behaviours, and social interactions. Mental diseases include, but are not limited to, psychosis, bipolar disorder, conduct disorder, depression, and anxiety disorder (WHO, 2013). Behind cancer and cardiovascular disease in terms of total disease burden (measured by disability-adjusted life years), mental diseases account for the bulk of impairment in the WHO European Region (Global health, 2015). People who do not have adequate mental health find it difficult or impossible to carry out everyday tasks such as self-care, education, work, and social involvement.

2.1.1 Psychiatric services

Psychiatric services are essential for addressing mental health disorders, which affect a substantial portion of the global population. These services include a wide range of interventions such as inpatient and outpatient care, psychotherapy, medication management, community-based support, and crisis intervention. In recent years, the demand for psychiatric services has surged due to increasing awareness of mental health issues and the impact of crises such as the COVID-19 pandemic (World Health Organization [WHO], 2022).

Understanding the evolution, accessibility, challenges, and effectiveness of these services is crucial for enhancing mental health outcomes worldwide.

The evolution of psychiatric services has shifted from institutional care to more community-based and integrated care models. Historically, psychiatric care was characterized by isolation in asylums with limited therapeutic interventions. However, the deinstitutionalization movement emphasized community-based care and patients' rights, promoting comprehensive and humane treatment approaches (Muir-Cochrane et al., 2020). Modern psychiatric services now focus on multidisciplinary teams, evidence-based practices, and recovery-oriented care that empowers patients to take an active role in their treatment (Davidson et al., 2021).

Community-based psychiatric services are designed to enhance accessibility and reduce stigma by providing care within patients' living environments. Models such as Assertive Community Treatment (ACT) and mobile crisis services have been effective in managing severe mental illnesses by reducing hospitalizations and improving quality of life (Frost et al., 2021). Additionally, integrating psychiatric services into primary healthcare has been increasingly advocated to bridge treatment gaps, particularly in low- and middle-income countries. The WHO's Mental Health Gap Action Programme (mhGAP) has been instrumental in this integration, demonstrating that primary healthcare workers can effectively manage common mental disorders with adequate training and support (WHO, 2019). Studies show that integrated care models enhance early detection, treatment continuity, and outcomes for patients with comorbid physical and mental health conditions (Patel et al., 2020).

Despite these advancements, significant barriers to accessing psychiatric services persist. Financial challenges remain a major obstacle, with limited insurance coverage, high out-of-pocket costs, and disparities in mental health funding compared to physical health (Chisholm et al., 2021). Implementing universal health coverage policies that include comprehensive mental health services could substantially improve access and reduce financial burdens. Furthermore, stigma and cultural misconceptions continue to deter individuals from seeking psychiatric care. Educational programs aimed at reducing stigma have been shown to positively influence help-seeking behaviors (Corrigan et al., 2020). Workforce shortages also pose a critical challenge, particularly in low-resource settings. Task-shifting approaches, where non-specialist providers deliver basic mental health services under supervision, have proven effective in expanding access to care (Barnett et al., 2021).

Pharmacotherapy is a cornerstone of psychiatric treatment for disorders such as schizophrenia, bipolar disorder, and depression. Recent studies have confirmed the efficacy of antipsychotics, antidepressants, and mood stabilizers, although challenges related to side effects and medication adherence persist (Kishimoto et al., 2021). Psychotherapeutic interventions, including cognitive-behavioral therapy (CBT) and dialectical behavior therapy (DBT), have also shown effectiveness for a wide range of psychiatric conditions (Stein et al., 2020). The COVID-19 pandemic accelerated the adoption of teletherapy, which has been found to have comparable efficacy to in-person therapy and has significantly expanded access to mental health services (Wind et al., 2020). Additionally, crisis intervention services, such as hotlines and mobile crisis units, are critical for preventing psychiatric

emergencies. These services have been effective in reducing suicide rates, emergency room visits, and inpatient admissions (Zun et al., 2021).

Looking forward, digital mental health solutions offer promising avenues for expanding psychiatric services. The rise of digital platforms and mobile apps has increased access to mental health resources, especially among younger populations. However, concerns about privacy, digital literacy, and the effectiveness of unregulated apps remain significant challenges (Torous et al., 2021). The gap in mental health funding also remains a pressing issue, as the increasing burden of mental health disorders is not met with adequate financial resources. Policies prioritizing mental health funding and the integration of services into universal health coverage are essential for sustainable improvements (Saxena et al., 2020). Additionally, more research is needed on the long-term outcomes of psychiatric interventions, especially in diverse cultural contexts. Studies focusing on personalized treatment approaches and biomarkers for mental health conditions could significantly advance the field (Insel, 2021).

In conclusion, psychiatric services are a critical component of healthcare systems worldwide. Addressing barriers to access, reducing stigma, expanding the mental health workforce, and adopting integrated care models are essential to meet the growing demand for psychiatric services. Future research should focus on culturally appropriate and personalized interventions, while policymakers must prioritize mental health funding and comprehensive care models to improve mental health outcomes globally.

2.2 Level of psychiatric service delivery during the COVID 19 pandemic

The COVID19 pandemic significantly disrupted healthcare systems worldwide, including psychiatric services. The pandemic's impact on mental health was profound, leading to a surge in psychological distress, anxiety, depression, and other psychiatric conditions due to prolonged lockdowns, economic uncertainties, and social isolation (Moreno et al., 2020). This sudden increase in demand, combined with restrictions on inperson services, forced mental health systems to adapt rapidly, often revealing existing gaps and challenges in psychiatric service delivery. This literature review explores the level of psychiatric service delivery during the COVID19 pandemic, focusing on accessibility, service adaptations, challenges, and implications for future mental health care.

Accessibility of Psychiatric Services

The accessibility of psychiatric services was significantly compromised during the pandemic due to lockdown measures, fear of infection, and resource reallocation to combat COVID19. Studies indicated a substantial reduction in inperson consultations and hospital admissions for psychiatric care, especially during the early phases of the pandemic (Hao et al., 2020). For instance, a survey across multiple countries reported a 30–50% reduction in psychiatric service utilization, with communitybased services and outpatient care being the most affected (World Health Organization [WHO], 2021). Vulnerable populations, including those with severe mental illnesses, were disproportionately impacted due to limited mobility and preexisting barriers to accessing care (Mishra et al., 2021).

Service Adaptations and Tele-psychiatry

To mitigate the impact of restricted inperson services, telepsychiatry emerged as a vital alternative, witnessing an unprecedented rise in adoption globally. Telepsychiatry enabled continuity of care through video consultations, telephone follow-ups, and mobile health applications (Torous et al., 2020). Studies highlighted that telepsychiatry was particularly effective for managing depression, anxiety disorders, and follow-up consultations for stable patients (Luo et al., 2020). For example, a study in the United States reported a 400% increase in telepsychiatry visits within the first six months of the pandemic, with high patient satisfaction and comparable clinical outcomes to face-to-face sessions (Smith et al., 2021). However, limitations such as digital literacy, internet access, and concerns about privacy and data security restricted its reach, particularly in low and middle-income countries (LMICs) (Basheti et al., 2021).

Impact on Different Psychiatric Conditions

The pandemic's impact varied across different psychiatric conditions. Individuals with preexisting severe mental illnesses such as schizophrenia and bipolar disorder experienced significant service disruptions, leading to exacerbations of symptoms and increased hospitalizations once restrictions were eased (Hao et al., 2020). Meanwhile, there was a notable surge in first time presentations of anxiety, depression, and substance use disorders, attributed to the psychosocial stressors of the pandemic (Vindegaard & Benros, 2020). Adolescents and young adults also reported heightened levels of anxiety and depression, exacerbated by school closures and social isolation,

highlighting the need for targeted psychiatric interventions for these groups (Singh et al., 2020).

Policy Responses and Funding

The pandemic exposed longstanding inadequacies in the funding and prioritization of psychiatric services. Many governments responded with emergency funding for mental health, but these measures were often insufficient and temporary (Moreno et al., 2020). The World Health Organization emphasized the need for integrating mental health into emergency preparedness plans and strengthening community based services to build resilient psychiatric care systems (WHO, 2021). Sustainable funding and comprehensive mental health policies are essential to address the growing demand for psychiatric services and the long term psychological impact of the pandemic (Moreno et al., 2020).

Conclusion

The COVID19 pandemic profoundly impacted psychiatric service delivery, revealing significant gaps in accessibility, funding, and preparedness. While telepsychiatry emerged as an effective alternative, challenges related to digital access and infrastructure limited its effectiveness in certain populations. Addressing these gaps through sustained funding, policy reforms, and integration of mental health into emergency preparedness is essential for enhancing the resilience of psychiatric services. Future research should focus on the longterm effects of the pandemic on psychiatric morbidity and the effectiveness of telepsychiatry in diverse socioeconomic settings.

2.3 Levels of stress, anxiety and depression among psychiatric healthcare workers during the COVID 19 pandemic

The COVID19 pandemic created unprecedented challenges for healthcare systems worldwide, including those involved in psychiatric care. Psychiatric healthcare workers (PHWs) played a crucial role in addressing the surge in mental health issues triggered by the pandemic. However, the added stress of caring for patients with COVID19, coupled with personal and professional challenges, contributed to significant psychological distress among psychiatric healthcare workers. This literature review explores the levels of stress, anxiety, and depression experienced by PHWs during the COVID19 pandemic, examining contributing factors, the impact of work conditions, and the psychological implications for this workforce.

Stress, Anxiety, and Depression in Psychiatric Healthcare Workers

Several studies during the pandemic highlighted that psychiatric healthcare workers were at a high risk for experiencing elevated levels of stress, anxiety, and depression. These mental health challenges were not only attributed to the direct impacts of COVID19 on patients but also the added pressure of managing their own fears about exposure, the risk of transmitting the virus to loved ones, and the overwhelming workload resulting from the pandemic (Chew et al., 2020). A study conducted by Liu et al. (2020) found that approximately 60% of healthcare workers, including psychiatric staff, reported experiencing high levels of psychological distress, with anxiety and depression being particularly pronounced.

In particular, psychiatric nurses and therapists were often on the frontlines of addressing the mental health needs of individuals suffering from anxiety, depression, and trauma. While providing support to patients, they also grappled with their own emotional and mental strain. For example, a study by Zhang et al. (2020) found that psychiatric healthcare workers reported a significantly higher prevalence of depression and anxiety compared to other healthcare workers due to the unique demands of their roles, including managing highstress situations, emotional exhaustion, and exposure to patients with severe mental illness.

Contributing Factors to Stress and Anxiety

Multiple factors contributed to the heightened stress and anxiety experienced by psychiatric healthcare workers during the COVID19 pandemic. Workload increase, fear of infection, and inadequate personal protective equipment (PPE) were identified as significant stressors. A study by Suryadevara et al. (2021) reported that psychiatric healthcare workers in hospitals treating COVID19 patients expressed significant fear of contracting the virus, particularly in the early stages of the pandemic, when the lack of PPE and knowledge about the virus contributed to heightened anxiety. Additionally, the rapid shift to telehealth and changes in work structure added another layer of stress, as healthcare workers had to adapt quickly to new ways of providing care (Torous et al., 2020).

Moreover, the uncertainty surrounding the pandemic and the lack of clear guidelines on how to manage psychiatric patients with COVID19 heightened feelings of helplessness and burnout. Research by Pfefferbaum and North

(2020) emphasized that constant changes in policies, combined with overwhelming patient volumes and the emotional toll of witnessing patient suffering, significantly increased levels of stress among PHWs.

Workplace Environment and Support Systems

The workplace environment and availability of support systems played a crucial role in either exacerbating or mitigating stress levels among psychiatric healthcare workers. Studies indicate that healthcare settings that lacked sufficient psychological support and mental health resources for their workers had higher reported levels of burnout, depression, and anxiety (Maunder et al., 2020). On the other hand, institutions that implemented regular mental health checkins, peer support groups, and counseling services showed a decrease in the psychological burden among their staff (Carmassi et al., 2020). Research by Suri et al. (2021) found that institutional support, including clear communication, adequate PPE, and policies that prioritized the mental wellbeing of healthcare workers, significantly reduced anxiety and stress among psychiatric healthcare workers.

Impact of Work Stress on Mental Health Outcomes

The psychological impact of work related stress, anxiety, and depression was not only reflected in the individual health of psychiatric healthcare workers but also in their ability to deliver quality care. High stress and burnout levels were associated with a decline in cognitive performance, emotional exhaustion, and increased absenteeism. A study by Zhan et al. (2021) found that psychiatric healthcare workers suffering from burnout had lower levels of empathy and were more likely to exhibit signs of emotional detachment,

making it more difficult for them to connect with patients effectively. This, in turn, led to an overall decline in the quality of psychiatric care provided.

Furthermore, the prolonged exposure to high stress environments also contributed to the development of long term mental health conditions, including chronic anxiety, depression, and posttraumatic stress disorder (PTSD). A systematic review by Liu et al. (2020) found that healthcare workers, including those in psychiatric settings, were at higher risk for developing PTSD following exposure to pandemic related stressors, particularly those with direct patient contact.

Coping Mechanisms and Resilience

Despite the overwhelming challenges, many psychiatric healthcare workers developed coping mechanisms to manage stress and maintain resilience. These included relying on social support networks, engaging in physical activity, mindfulness practices, and seeking professional psychological help (Shanafelt et al., 2020). Institutions that provided wellness programs and encouraged self-care also helped mitigate the psychological toll of the pandemic. A study by Carmassi et al. (2020) highlighted that psychiatric healthcare workers who received organizational support in the form of debriefing sessions, mental health resources, and flexible work schedules exhibited lower levels of stress and depression compared to those without such support.

Conclusion

Psychiatric healthcare workers faced significant stress, anxiety, and depression during the COVID19 pandemic. Contributing factors included increased

workloads, fear of infection, and lack of adequate support. The psychological strain on these workers was compounded by the emotional toll of witnessing the suffering of patients, and the need to adapt quickly to new methods of care delivery. Addressing these challenges requires a holistic approach that includes providing sufficient institutional support, mental health resources, and fostering a work environment conducive to coping and resilience. Future research should explore the long term psychological impact on psychiatric healthcare workers and the effectiveness of interventions aimed at supporting their mental health.

2.4 Social challenges faced in healthcare service delivery by healthcare workers as a result of the COVID 19 pandemic

The COVID19 pandemic created immense social challenges for healthcare workers (HCWs), who were on the front lines of managing the crisis. From increased workloads and fear of exposure to the virus, to the emotional toll of dealing with the widespread illness and death, HCWs faced significant social challenges during the pandemic. These challenges were not only related to their professional roles but also to their personal lives, social interactions, and community relationships. This literature review explores the social challenges faced by healthcare workers during the COVID19 pandemic, including issues of stigma, social isolation, work life balance, and the impact on their families and communities.

Stigma and Discrimination

One of the major social challenges faced by healthcare workers during the COVID19 pandemic was stigma and discrimination. Healthcare workers,

particularly those involved in the direct treatment of COVID19 patients, were often seen as potential carriers of the virus. This perception led to instances of social distancing, isolation, and discrimination against HCWs by the public and even within their own communities (GómezOchoa et al., 2020). Studies conducted in various countries, including China and Italy, showed that healthcare workers were frequently stigmatized for their roles in treating COVID19 patients, resulting in them being shunned by neighbours and even their families (Zhu et al., 2020). Such stigma led to heightened feelings of social exclusion, emotional distress, and even reluctance among healthcare workers to seek help for their mental health concerns.

The stigma against healthcare workers was compounded by the intense fear and uncertainty surrounding the virus. A study by Zhang et al. (2020) found that HCWs faced social exclusion due to the fear that they could spread the virus to their families and communities. In some cases, HCWs reported being rejected from public spaces such as stores, restaurants, and public transportation, further deepening their feelings of isolation.

Social Isolation and Work Life Balance

Another significant social challenge faced by healthcare workers during the pandemic was social isolation and the strain on their work life balance. The demands of working in hospitals and clinics during the pandemic often led to extended hours and shifts, leaving healthcare workers with little time to spend with their families and communities. The pressure to meet patient care demands, coupled with the emotional toll of dealing with high rates of illness and death, resulted in a loss of personal time and social connections. A study

by Liu et al. (2021) highlighted that healthcare workers experienced higher levels of social isolation, particularly those working in COVID19 units, where social distancing and quarantine measures were strictly enforced. The lack of social interaction with family and friends, coupled with the emotional exhaustion of their roles, contributed to a sense of loneliness and alienation.

Additionally, many healthcare workers faced the difficult decision of living separately from their families to avoid potentially infecting them. A survey by Zhu et al. (2020) found that 37% of healthcare workers in China chose to live away from their families during the height of the pandemic to reduce the risk of transmission. This decision often led to feelings of guilt, distress, and emotional strain, as healthcare workers were separated from their loved ones for extended periods.

Impact on Family Relationships

The COVID19 pandemic placed significant stress on family relationships for healthcare workers. The separation from family members, long hours, and the constant fear of exposure to the virus created additional pressures on personal relationships. Healthcare workers often found themselves in a constant state of worry about the health of their loved ones. A study by Shen et al. (2021) noted that healthcare workers were particularly concerned about the wellbeing of their children and elderly family members. This anxiety, combined with the physical and emotional exhaustion from long shifts, strained family dynamics and led to increased instances of conflict and emotional distancing within households.

Furthermore, healthcare workers faced difficulties balancing their professional responsibilities with their role as caregivers within their families. Many had to navigate the challenges of caring for children or elderly relatives while also managing the emotional and physical demands of their work. According to a study by Hall et al. (2020), healthcare workers, particularly women, experienced higher levels of stress related to caregiving responsibilities, which added to their already overwhelming work schedules and responsibilities.

Psychological and Emotional Toll

The social challenges faced by healthcare workers during the pandemic were often intertwined with the psychological and emotional toll of the crisis. The pressure of caring for patients with severe and often fatal cases of COVID19, the loss of colleagues, and the heightened public scrutiny of their actions contributed to significant emotional stress. A study by Pappa et al. (2020) found that healthcare workers experienced elevated levels of anxiety, depression, and posttraumatic stress disorder (PTSD) as a result of their experiences during the pandemic. These psychological challenges were exacerbated by the lack of social support, as many healthcare workers were hesitant to reach out for help due to the stigma associated with mental health issues in the healthcare profession (Riley et al., 2021).

Moreover, the emotional toll of the pandemic was often compounded by the lack of appropriate mechanisms for emotional and psychological support within healthcare institutions. A study by Brooks et al. (2020) revealed that healthcare workers who lacked adequate mental health support from their employers were more likely to experience burnout and mental health crises.

The absence of regular counseling, peer support networks, and opportunities for debriefing made it difficult for healthcare workers to process their emotions and cope with the traumatic experiences of the pandemic.

Conclusion

Healthcare workers during the COVID19 pandemic faced significant social challenge, including stigma, social isolation, and strains on their personal relationships. The fear of spreading the virus, combined with long working hours and the emotional toll of treating COVID19 patients, created an environment of heightened stress and anxiety. These social challenges had profound impacts not only on the healthcare workers themselves but also on their families and communities. Addressing these challenges requires comprehensive strategies that prioritize the mental health and wellbeing of healthcare workers, provide social support, and reduce the stigma surrounding their roles in the pandemic. Future research should focus on understanding the long term social and psychological consequences of the pandemic on healthcare workers and developing effective interventions to mitigate these effects.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Study area

The study was done at Butabika National Mental Referral Hospital between February and March of 2023. The Uganda Ministry of Health sponsors and operates Butabika Hospital, a public hospital where all treatments are offered without charge. The hospital is Uganda's sole referral psychiatric facility. It was founded in 1955 and, as of February 2010, has a bed capacity of 900. Situated in the Kampala neighbourhood of Butabika lies the Butabika National Referral Hospital. Situated in the Nakawa Division in the southeast of the city, Butabika is situated on the northern shores of Lake Victoria, the largest freshwater lake in Africa. By road, this place is about 10.5 kilometers (6.5 miles) east of Kampala's core business center. Mulago National Referral Hospital is around 12.5 kilometers (8 miles) southeast of Butabika Hospital. Butabika Hospital is located at 0°18'57.0"N, 32°39'33.0"E. (latitude: 0.315845 and longitude: 32.659160). The hospital was chosen for the study because it was one of the main COVID – 19 referral facilities amidst the continued provision of psychiatric services to the patients by the staff during the pandemic.

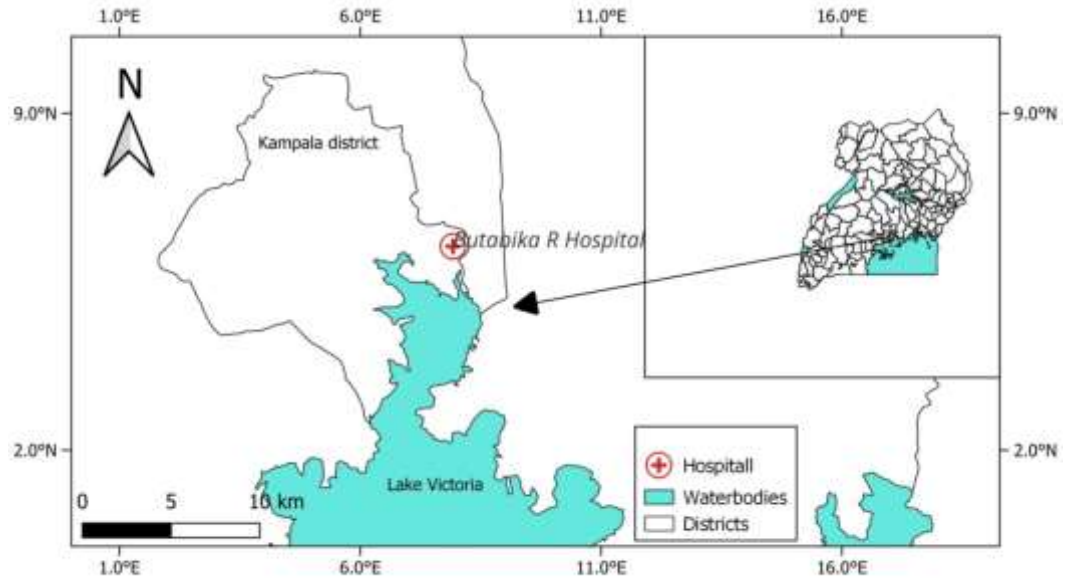


Figure 3.1: Map of study area

3.2 Design of the research

A cross-sectional design was used in the study. On the pandemic's consequences on healthcare providers' mental health and psychiatric service delivery, both quantitative and qualitative data gathering approaches were used.

3.3 Study and target population

The population was limited to healthcare providers at a psychiatric hospital (Doctor, nurses, physician, clinician and others healthcare workers in Butabika National Referral hospital). The target population for this research was the healthcare providers who were available at Butabika national hospital at the time of the research and worked during the COVID 19 period.

3.4 Eligibility Criteria

Exclusion criteria were characteristics that an individual must not have in order to be a member of the population (Polit & Beck 2008). For this study, the inclusion criteria was as follows:

Inclusion criteria:

- Healthcare providers who were at the hospital by the time of data collection
- Healthcare providers who provided psychiatric services during the COVID 19 period.

Exclusion criteria

- Healthcare providers who never gave consent to participate
- Healthcare providers who never worked during the COVID 19 period

3.5 Choosing a sample size

The actual size of the sample that was studied was determined from the sample size determination formulae as described by (Slovin *et al.*, 2019) since the population size of the healthcare providers is known. Below; illustrates the sampling size computation procedure that was followed in this proposed study.

$$n = \frac{N}{1 + N(e^2)}$$

n = Number of respondents

N= Number of workers (394)

e= error (0.05)

$$n = \frac{394}{1 + 394(0.05^2)}$$

$$n = \frac{394}{1 + 394(0.0025)}$$

$$n = \frac{394}{1 + 0.985}$$

$$n = \frac{394}{1.985}$$

$$n = 198.4$$

$$\mathbf{n = 198 \textit{ Respondents}}$$

$$\text{Inclusion of 10\% non-response rate} = 198 \times 10\%$$

$$= 19.8$$

$$\text{Sample size} = 198 + 19.8$$

$$= 218 \textit{ participats}$$

3.6 Sampling technique and procedures

A two-stage sampling procedure was used to select participants for the study. First, the wards were chosen using stratified sampling. Then, participants were purposively selected from each stratum until the required sample size was achieved. The researcher specifically selected individuals who were considered to have a higher level of knowledge related to the research topic.

3.7 Data collection methods

The investigator employed questioning, reviewing of documents and interviews to collect information from the healthcare providers after obtaining consent from the participants.

3.8 Data collection tools

The investigator employed structured scale type questionnaires, document review guide to collect data and in – depth interviews to acquire information from the participant.

3.8.1 Document review guide

The responses from the document review guide were used to give feedback on objective 1 where by electronic data and paper data was reviewed from the month of September 2021 to April 2022 checking on the trends of access of psychiatric services during the COVID 19 epidemic (Appendix 2).

3.8.2 Questionnaires

Part 1: Socio – demographic

The questionnaire contained mainly the socio – demographic characteristics of the mental healthcare providers giving a detail of the age, gender, profession, education level, marital status, work experience, housing status, religion, working category, experienced stressful life of the mental healthcare providers (Appendix 3).

Part 2: Validated psychometric questionnaires

Self-reporting tools, such as the Perceived Stress Scale (PSS), a validated 10-item questionnaire designed to gauge self-reported stress levels by evaluating thoughts and feelings, were used to evaluate the clinical features of mental health care providers. Higher scores on the scale indicate higher levels of stress. Each item on the scale is rated on a range from 0 (never) to 5 (very often). To determine the likelihood of generalised anxiety disorder (GAD) among mental healthcare practitioners, each item on the generalised anxiety disorder scale (GAD-7) is scored from 0 (not at all) to 4 (extremely probable) (almost every day). The Patient Health Questionnaire Scale (PHQ-9) rates each of the nine items from 0 (not at all) to 3 (extremely probable) to determine the probability that mental health professionals may experience major depressive disorder (MDD) on a virtually daily basis. It is useful for planning and monitoring depression treatment (Appendix 3).

3.8.3 Interview guide

The interview was done to identify the difficulties faced by healthcare workers during and after the pandemic at Butabika national referral hospital (Appendix 4).

3.9 Analysing data

3.9.1 Data analysis: Objective 1

Exploratory V.6.2.2 was used to clean and visualize the data. Exploratory software was used to aggregate data and exhibit it in charts. Each data point in a graph represented the count for the variable being studied. Charts created with Locally Estimated Scatterplot Smoothing (LOESS) were overlaid with a

smoothed trend line. Error bars were employed to determine the correlation between the degree of mental health care accessibility and the pandemic.

3.9.2 Data analysis: Objective 2

To determine the relationship between healthcare workers' quality of life and service delivery during the COVID-19 pandemic, data were analyzed using IBM SPSS Statistics for Windows, version 20. Quantitative variables were presented as means and standard deviations (SD). Demographic information was displayed in tables and graphs, including percentages, frequencies, and standard deviations. Chi-square testing was used to compare demographic characteristics among healthcare workers, with a significance level set at $P < 0.05$.

Categorical variables were expressed in terms of numbers (%). the Patient Health Questionnaire-9 (PHQ-9; for likely MDD, $\text{PHQ-9} \geq 10$), the Generalised Anxiety Disorder 7-item (GAD-7) scale (for probable GAD, $\text{GAD-7} \geq 10$), and the Perceived Stress Scale (PSS-10; for moderate-to-high stress, $\text{PSS} \geq 14$). A one-way ANOVA with 2-tailed significance ($P < 0.05$) was utilised to assess statistical differences between the groups of healthcare professionals in terms of mean PSS-10, GAD-7, and PHQ-9 scores. The researchers used multiple linear regression to find significant predictors of moderate-to-high stress, probable GAD, and likely MDD among all healthcare practitioners.

3.9.3 Data analysis: Objective 3

All responses were read in detail and coded. Content analysis was used to create themes for each participant. Themes were discussed until consensus was reached and presented as tables. The NVivo 10 qualitative data analysis software from QSR International was used to conduct the analyses and find the relationship in the challenges faced in the healthcare service delivery by healthcare workers as a result of the pandemic at Butabika national referral hospital

3.10 Quality control issues

Data was collected by a group of research assistants who were first oriented and trained on the purpose of the study and variables in the study, the components of the questionnaire and data quality management. The pre-test of the tools was done at Naguru hospital, Uganda. This gave a better idea of how much time each instrument took to administer.

3.11 Ethical issues

The supervisors were given a finished research proposal to approve. The study received ethical approval and authorization to perform the study at the hospital from The AIDS Support Organisation Research Ethical Committee (TASO-2022-193). Before beginning the survey, each participant was asked to complete informed consent forms. Participants' privacy was protected, and they took part in the study anonymously.

3.12 Study limitations

Some health workers were extremely cautious with information this made finding information somehow difficult.

The fact that the study relied on participants' retrospective information, which may have been prone to recall bias, further constrained it

CHAPTER FOUR: RESULTS

4.0 Introduction

In this chapter, the study results are described, and the findings presented in tables, histograms and graphs. The chapter contains the demographic characteristics of the staff, trends in utilisation of services during the pandemic, effect of COVID 19 on the staff.

4.1 Demographic characteristics of staff

In the study, out of the 218 participants that were aimed for the study a total of 198 staff were enrolled in the study by consenting and fully filling in the questionnaires giving a feedback rate of 90.8%.

4.1.1 Gender of the respondents

The female participants were the majority 58.6% in the study with the nurses giving the highest number of female participants 69.4% followed by the clinicians with 61.9% then the doctors with a number of 52.9%, however the other staff provided the least number of female respondents 40.4%. The gender of the staff and their occupation were significantly related (Table 4.1).

Table 4.1: Distribution of demographic characteristics by occupation of staff

Variable	Category	Doctor	Nurses	Physician	Clinician	Others	Total
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Gender	Female	9 (52.9)	68 (69.4)	7 (46.7)	13 (61.9)	19 (40.4)	116 (58.6)
	Male	8 (47.1)	30 (30.6)	8 (53.3)	8 (38.1)	28 (59.6)	82 (41.4)
Education level	Certificate	4 (23.5)	50 (51.0)	9 (60.0)	4 (19.0)	12 (25.5)	79 (39.9)
	Bachelor's	9 (52.9)	16 (16.3)	1 (6.7)	9 (42.9)	9 (19.1)	44 (22.2)
	Master's	0 (0.0)	1 (1.0)	2 (13.3)	5 (23.8)	14 (29.8)	22 (11.1)
	PhD	0 (0.0)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)
	Diploma	4 (23.5)	30 (30.6)	3 (20.0)	3 (14.3)	12 (25.5)	52 (26.3)
Housing status	Own home	6 (35.3)	30 (30.6)	1 (6.7)	5 (23.8)	11 (23.4)	53 (26.8)
	Living with family	9 (52.9)	24 (24.5)	5 (33.3)	8 (38.1)	7 (14.9)	53 (26.8)
	Renting	2 (11.8)	39 (39.8)	7 (46.7)	5 (23.8)	18 (38.3)	71 (35.9)
	Staff quarters	0 (0.0)	5 (5.1)	2 (13.3)	3 (14.3)	10 (21.3)	20 (10.1)
	Hostel	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.1)	1 (0.5)
Working time	Part time	3 (17.6)	8 (8.2)	0 (0.0)	10 (47.6)	6 (12.8)	27 (13.6)
	Full time	14 (82.4)	90 (91.8)	15 (100.0)	11 (52.4)	41 (87.2)	171 (86.4)

Change in work volume	Worked less	1 (5.9)	5 (5.1)	0 (0.0)	0 (0.0)	9 (19.1)	15 (7.6)
	No change	10 (58.8)	35 (35.7)	3 (20.0)	12 (57.1)	7 (14.9)	67 (33.8)
	Worked more	6 (35.3)	58 (59.2)	12 (80.0)	9 (42.9)	31 (66.0)	116 (58.6)

4.1.2 Age of the respondents

The staffs with the age of 30 - 44 years were the majority 58.6% followed with those of age 18 - 29 years with 26.8%. For the staff that had an age of 30 - 44 years, the majority were physicians 80.0% followed by the others 68.1% then the nurses 59.2%. The doctors had the least number of participants 23.5% with the age of 30 - 44 years. The staff that had an age of 45 - 60 years were 14.6% of which the doctors were the majority 29.4% followed by the other staff, the nurses and physicians had a similar number of staff 13.3% who were older however none of the clinicians had an age more than 45 years. The age of the staff and their occupation were significantly related (figure 4.1).

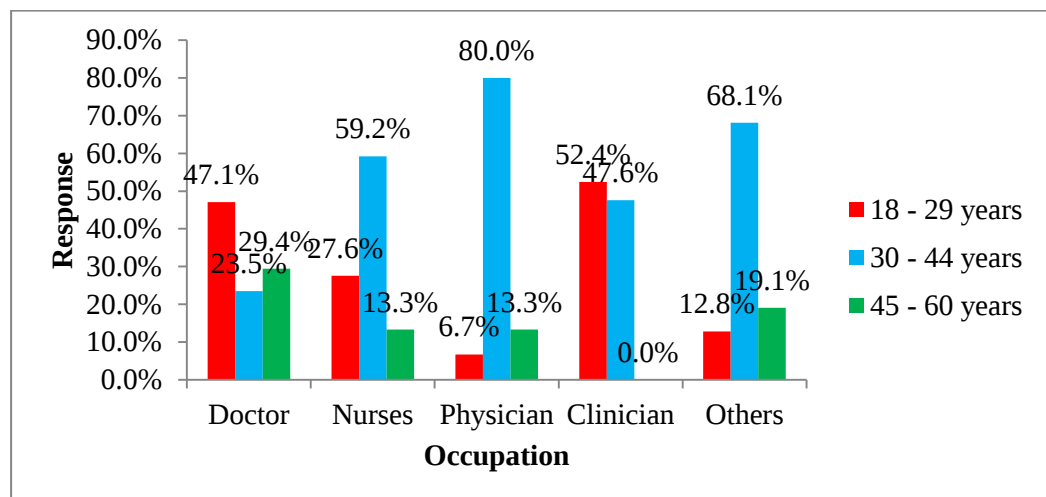


Figure 4.1: Distribution of age by occupation of staff

4.1.3 Education level of the respondents

The staff with a certificate as the highest level of education was the majority 39.9% followed with those with a diploma with 26.3%. For the staff that had a certificate, the majority were physicians 60.0% followed by the nurses 51.0% then the other staff 25.5%. The clinicians had the least number of participants 19.0% with a certificate as the highest level of education. The staff that had a

bachelor's degree were 22.2% of which the doctors and clinicians were the majority with 52.9% and 42.9% respectively however the physicians had the least staff 6.7% with bachelor's degree. In general, a low number of staff had a master's degree and PhD with 11.1% and 0.5% respectively, none of the physicians, doctors, clinicians and other staff that participated in the study had a PhD degree as well none of the doctors had a master's degree. The staff's employment and educational attainment were significantly related (Table 4.1).

4.1.4 Marital status of the respondents

The staffs that were married were the majority 73.7% followed with those that were single 22.7%. For the staffs that were married, the majority were nurses 78.6% followed by the physicians 73.3% then the other staff 72.3%. The clinicians had the least number of participants 57.1% that were married. In general the least number of staff had were divorced and widowed with 2.5% and 1.0% respectively, none of the physicians, doctors, clinicians were either divorced or widowed. There was no significant relationship between the marital status of the staff and their occupation (Figure 4.2).

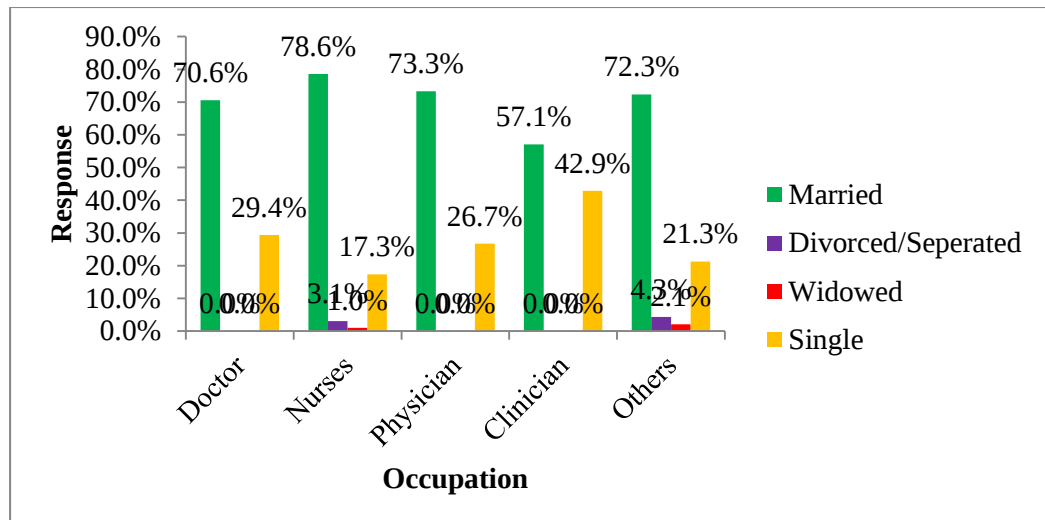


Figure 4.2: Distribution of marital status by occupation of staff

4.1.5 Religious affiliation of the respondents

According to the religious affiliation Anglican staffs were the majority 35.9% followed by Catholics 35.4%. For the staffs that were Anglican, the majority were clinicians 42.9% followed by the physicians 40.0% then the nurses 38.8%. The other staff had the least number of participants 27.7% that were Anglican. In general the least number of staff had were seventh day Adventist and Isa Messiah with 3.5% and 1.5% respectively. None of the doctors and clinicians were of the seventh day Adventist while only the nurses 3.1% presented staff with Isa messiah faith. There was no significant relationship between the religion of the staff and their occupation (figure 4.3).

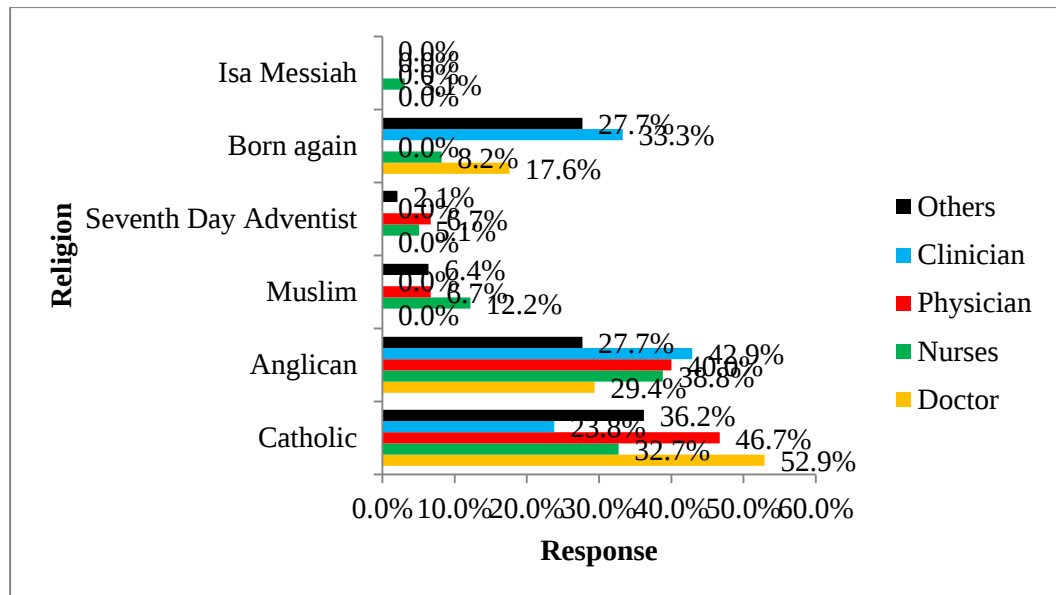


Figure 4.3: Distribution of religious affiliation by occupation of staff

4.1.6 Housing status of the respondents

The staff that were renting were the majority 35.9% followed with those that were living with family and own home 26.8% each. For the staff that were renting, the majority were physicians 46.7% followed by the nurses 39.8% then the other staff 38.3%. The doctors had the least number of participants 11.8% that were renting. In general the least number of staff were in the hostel with 0.5%. Only the other staff 2.1% presented staff in the hostel. There was a significant relationship between the housing status of the staff and their occupation (Table 4.1).

4.1.7 Experience of respondents

The staff that had 1 - 5 years of experience was the majority 32.3% followed with those that had 6 - 10 years 21.7%. For the staff that had 1 - 5 years, the majority were clinicians 52.4% followed by the nurses 35.7% then the doctors 29.4%. The physicians had the least number of participants 13.3% that had 1 - 5 years' experience. In general the least number of staff had > 20 years with

11.1%. None of the clinicians had > 20 years of experience. There was no significant relationship between the experience of the staff and their occupation (figure 4.4).

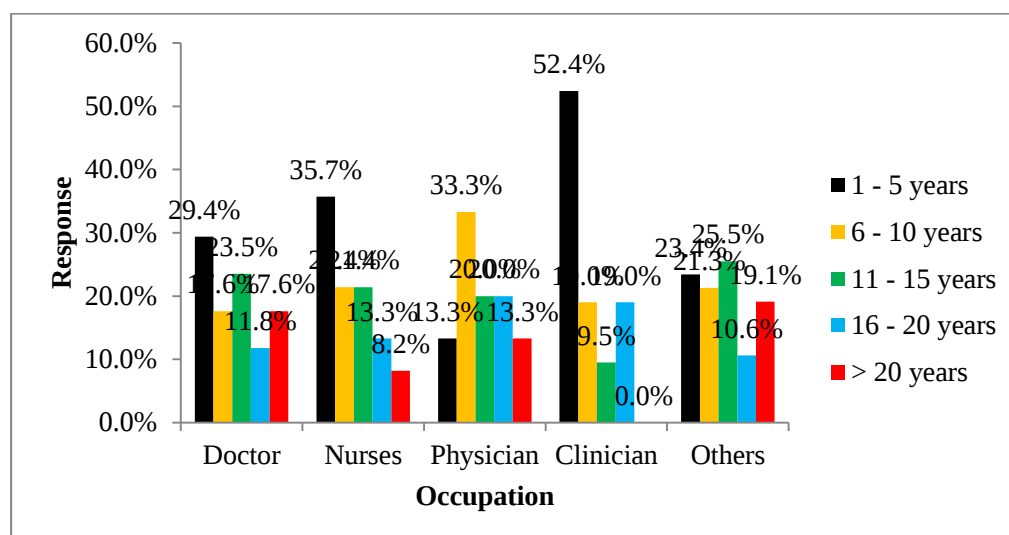


Figure 4.4: Distribution of experience by occupation of staff

4.1.8 Work time of the respondents

The full timers were the majority 86.4% in the study with the physicians giving the highest number of full time participants 100.0% followed by the nurses with 91.8% then the other staff with a number of 87.2%, however the clinicians provided the least number of full time respondents 52.4%. There was a significant relationship between the working time of the staff and their occupation (Table 4.1).

4.1.9 Change in volume of work of the respondents

The staff that more working hours were the majority 58.6% in the study with the physicians giving the highest number of staff that worked more 80.0% followed by the other staff with 66.0% then the nurses with a number of 59.2%, however the doctors provided the least number of staff that worked

more 35.3%. There was a significant relationship between the change in work volume of the staff and their occupation (Table 4.1).

4.2 The level of psychiatric services delivery during the COVID 19 pandemic

4.2.1 Appointments to be handled by healthcare workers

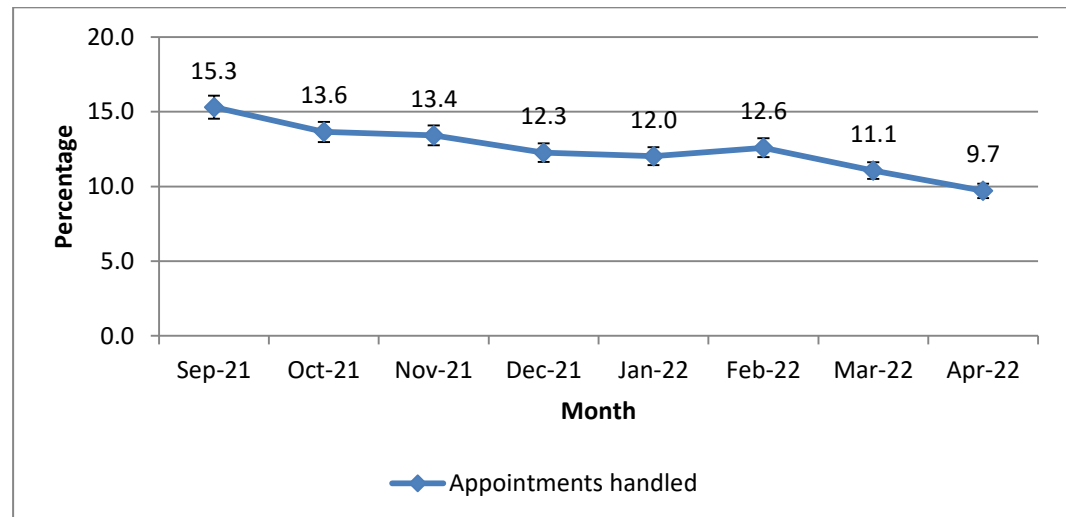


Figure 4.5: Appointments to be handled by healthcare workers

For the 16720 appointments for the period in the study, majority of the appointments 15.3% were in September 2021, and there was a gradual decline of the number of appointments in December 2021 with 12.3% during the lockdown. After the lockdown in January 2022 there was increase in the number of appointments from 12% to 12.6% in February 2022, however as the months moved on there was a decline in the number of appointments in February 2022 to 9.7% in April 2022 (figure 4.1).

4.2.2 Patients treated during the pandemic

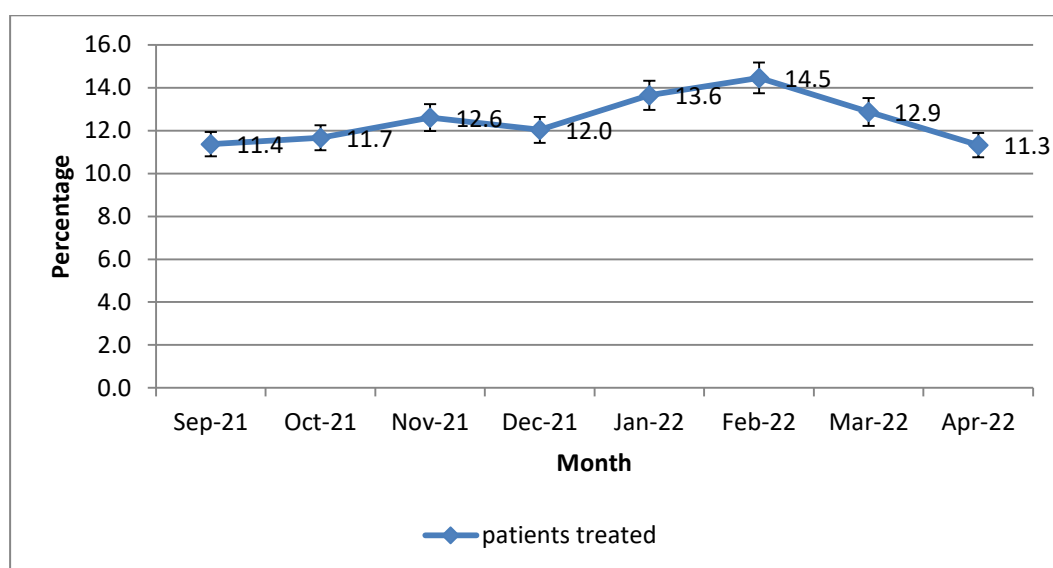


Figure 4.6: Patients treated during the pandemic

Concerning the patients who attended treatment over 14140 attended treatment for the 8 months. There was a low attendance for treatment during the lockdown period of the pandemic with less than 13% for the months from September 2021 to December 2021. After the lockdown there was a sharp increase of the patients that received treatment from 12% in December to 14.5% in February 2022, however a decrease was realised among patients receiving treatment in the months of March 2022 12.9% and April 2022 11.3% (figure 4.3).

4.3 Examining the stress, anxiety and depression of psychiatric healthcare workers during the pandemic.

4.3.1 Indicators of stress, depression and anxiety

4.3.1.1 Stress

A sudden event that occurred during the previous month caused occasional upset to over half of the personnel. In the last month, fewer than half of the employees reported never having felt powerless over the significant aspects of their lives. In the past month, less than half of the workers reported experiencing moments of anxiety and "stress." In the previous month, over one-third of the staff members frequently felt confident in their capacity to manage their personal issues. In the past month, little fewer than one-third of the employees reported feeling like things were going their way quite often. Less than one-third of the workers said they seldom ever felt overburdened by the volume of work they had to finish in the preceding month (Table 4.2).

Table 4.2: Indicators of stress

	Never	Almost never	Sometimes	Fairly often	Very often	F	Sig.
	n (%)	n (%)	n (%)	n (%)	n (%)		
How often have you been angry over something that came as a surprise?	23 (11.6)	27 (13.6)	109 (55.1)	31 (15.7)	8 (4.0)	7.596*	0.006
How often have you believed that you had no control over the significant aspects of your life?	77 (38.9)	32 (16.2)	50 (25.3)	35 (17.7)	4 (2.0)	13.381*	0.000
How frequently have you experienced anxiety and "stress"?	23 (11.6)	34 (17.2)	88 (44.4)	36 (18.2)	17 (8.6)	14.386*	0.000
How frequently have you been assured that you can manage your own issues?	14 (7.1)	10 (5.1)	28 (14.1)	68 (34.3)	78 (39.4)	62.352*	0.000
How frequently did you think things were going your way?	17 (8.6)	23 (11.6)	51 (25.8)	65 (32.8)	42 (21.2)	24.512*	0.000
How frequently did you feel like you couldn't handle everything that you had to do?	33 (16.7)	65 (32.8)	43 (21.7)	45 (22.7)	12 (6.1)	10.138*	0.002
How frequently in your life have you been able to regulate your annoyances?	15 (7.6)	20 (10.1)	51 (25.8)	62 (31.3)	50 (25.3)	40.502*	0.000
How frequently did you feel like you had everything under	44 (22.2)	25 (12.6)	52 (26.3)	51 (25.8)	26 (13.1)	6.749*	0.010

control?							
How often have circumstances that were beyond your control made you angry?	24 (12.1)	53 (26.8)	60 (30.3)	44 (22.2)	17 (8.6)	20.919*	0.000
How frequently have you experienced	49 (24.7)	40 (20.2)	54 (27.3)	35 (17.7)	20 (10.1)	17.376*	0.000

***= P < 0.05**

4.3.1.2 Anxiety

More than half of the staff never felt nervous, anxious or on edge when working during the pandemic. Over a half of the staff were able to stop and control worrying while working during the pandemic. Over a half of the staff were not worrying too much about different things during the pandemic. Less than half of the staff had trouble relaxing while working during the pandemic. Less than half of the staff were so restless that it was hard to sit still during the pandemic. More than a quarter of the staff were easily annoyed and irritable during the pandemic. Less than a quarter of the staff were feeling scared as though something awful might happen while working during the pandemic (Table 4.3).

Table 4.3: Indicators of anxiety among staff

	Not at all	Several days	More than half the days	Nearly every day	F	Sig.
	n (%)	n (%)	n (%)	n (%)		
Sensation of trepidation, anxiety, or edge	116 (58.6)	41 (20.7)	29 (14.6)	12 (6.1)	80.665*	0.000
Being unable to manage or cease worrying	136 (68.7)	30 (15.2)	21 (10.6)	11 (5.6)	155.056*	0.000
Worrying excessively about a variety of issues	107 (54.0)	32 (16.2)	42 (21.2)	17 (8.6)	172.462*	0.000
Having trouble unwinding	119 (60.1)	35 (17.7)	26 (13.1)	18 (9.1)	57.767*	0.000
Having trouble staying motionless due to constant restlessness	157 (79.3)	22 (11.1)	11 (5.6)	8 (4.0)	125.915*	0.000
Being agitated or quickly irritated	140 (70.7)	39 (19.7)	10 (5.1)	9 (4.5)	52.520*	0.000
Being terrified, as though something terrible would occur	154 (77.8)	22 (11.1)	11 (5.6)	11 (5.6)	114.639*	0.000

*= **P < 0.05**

4.3.1.3 Depression

During the pandemic, almost half of the employees showed little interest in or enjoyment from their work. During the epidemic, exactly half of the personnel reported feeling gloomy, despondent, or despairing. During the pandemic, almost half of the personnel experienced difficulties going asleep, staying asleep, or sleeping too much. During the pandemic, almost half of the employees reported feeling exhausted or lacking in energy. During the epidemic, almost half of the employees overate or had low appetites. During the epidemic, almost half of the employees felt unsatisfied with themselves or like a failure. During the epidemic, almost half of the personnel found it difficult to focus on tasks like reading newspapers or watching television. During the epidemic, less than half of the employees moved or spoke so slowly that others may have observed. During the pandemic, somewhat fewer than a third of the employees considered suicide or that it would be preferable for them to die (Table 4.4).

Table 4.4: Indicators of depression among staff

	Not at all	Several days	More than half the days	Nearly every day	F	Sig.
	n (%)	n (%)	n (%)	n (%)		
Little enthusiasm or enjoyment in one's activities	89 (44.9)	49 (27.4)	25 (12.6)	35 (17.7)	28.301*	0.000
Feeling unhappy, melancholy, or forlorn	99 (50.0)	20 (10.1)	36 (18.2)	43 (21.7)	33.151*	0.000
Problems getting to sleep, remaining asleep, or sleeping excessively	93 (47.0)	33 (16.7)	26 (13.1)	46 (23.2)	54.680*	0.000
Being worn out or lacking in vitality	58 (29.3)	40 (20.2)	48 (24.2)	52 (26.3)	31.817*	0.000
Insufficient appetite or overindulging in food	94 (47.5)	28 (14.1)	32 (16.2)	44 (22.2)	56.548*	0.000
Having negative self-esteem	91 (46.0)	29 (14.6)	22 (11.1)	56 (28.3)	64.109*	0.000
Difficulty focusing on tasks, like reading the newspaper	89 (44.9)	41 (20.7)	32 (16.2)	36 (18.2)	37.814*	0.000
Speaking or moving so slowly that others could have observed.	123 (62.1)	22 (11.1)	25 (12.6)	28 (14.1)	23.262*	0.000
Feelings that it would be better for you to die	133 (67.2)	11 (5.6)	9 (4.5)	45 (22.7)	30.635*	0.000

***= P < 0.05**

4.3.2 Prevalence of psychometric disorders among the staff

Regarding to the level of stress during the pandemic the staff had a moderate to high level of stress with 91.9% of the participating staff anticipating to it. Regarding the level of anxiety during the pandemic the staff had a minimal level of anxiety with more than half 65.2% of the participating staff anticipating to it. Regarding to the level of depression during the pandemic the staff had a likely level of depression with more than half 57.6% of the participating staff anticipating to it. One way analysis of variance of stress, depression and anxiety against occupation showed the only anxiety has statistically significant effect on the occupation of the staff ($F = 3.537$; $P = 0.008$) (Table 4.5).

Table 4.5: ANOVA relationship between occupation of staff and psychometric disorders

		Doctor	Nurses	Physician	Clinician	Others	Total	F	Sig.
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Stress	Low	1 (5.9)	11 (11.2)	1 (6.7)	0 (0.0)	3 (6.4)	16 (8.1)	0.864	0.487
	Moderate to high	16 (94.1)	87 (88.8)	14 (93.3)	21 (100.0)	44 (93.6)	182 (91.9)		
Anxiety	Minimal	12 (70.6)	74 (75.5)	9 (60.0)	6 (28.6)	28 (59.6)	129 (65.2)	3.537	0.008
	Mild	3 (17.6)	13 (13.3)	6 (40.0)	10 (47.6)	9 (19.1)	41 (20.7)		
	Likely	2 (11.8)	11 (11.2)	0 (0.0)	5 (23.8)	10 (21.3)	28 (14.1)		
Depression	Minimal	6 (35.3)	28 (28.6)	6 (40.0)	9 (42.9)	11 (23.4)	60 (30.3)	0.985	0.417
	Mild	3 (17.6)	11 (11.2)	3 (20.0)	1 (4.8)	6 (12.8)	24 (12.1)		
	Likely	8 (47.1)	59 (60.2)	6 (40.0)	11 (52.4)	30 (63.8)	114 (57.6)		

4.3.3 Determinants of psychometric disorders

4.3.3.1 Depression

Staff that had a master's degree were 0.103 times less likely to be depressed than those that had a diploma as the highest level of education at a 95% CI(0.014 - 0.742). Staff that owned a home were 1.602×10^7 times more likely to be depressed than those that stayed at hostel at a 95% CI (2.92×10^6 - 8.79×10^7). Staff that lived with their families were 2.30×10^6 times more likely to be depressed than those that stayed at hostel at a 95% CI (4.64×10^5 - 1.14×10^7). Staff that were renting were 7.69×10^6 times more likely to be depressed than those that stayed at hostel at a 95% CI (1.41×10^6 - 4.19×10^7). Staff that were part timers were 5.378 times more likely to be depressed than those that were full timers at a 95% CI (1.403 - 20.613) (Appendix 5)

4.3.3.2 Anxiety

For the staff that had minimal anxiety; female staff were 0.071 times less likely to have anxiety than male staff at a 95% CI (0.011- 0.470). The doctors were 16.478 times more likely to have anxiety than those that the other staff at a 95% CI (1.032 - 263.189). The nurses were 25.023 times more likely to have anxiety than the other staff at a 95% CI (3.403 - 183.991) (Appendix 6)

For staff that had mild anxiety; the female staff were 0.110 times less likely to have anxiety than the male staff at a 95% CI (0.013 - 0.926). Staff that owned a home were 0.012 times less likely to have anxiety than staff that stayed at the hostel at a 95% CI (0.001 - 0.247). Staff that lived with their family were 0.058 times less likely to have anxiety than staff that stayed at the hostel at a

95% CI (0.004 - 0.785). Doctors were 61.365 times more likely to have anxiety than the other staff at a 95% CI (1.785 - 2109.277). Nurses were 21.784 times more likely to have anxiety than the other staff at a 95% CI (1.836 - 258.491). Clinicians were 75.739 times more likely to have anxiety than the other staff at a 95% CI (3.213 - 1785.422) (Appendix 7)

4.3.3.3 Stress

Staff that had a certificate were 0.023 times less likely to be stressed than those that had a diploma as the highest level of education at a 95% CI (0.001 - 0.552). Staff that had a bachelor's degree were 0.008 times less likely to be stressed than those that had a diploma as the highest level of education at a 95% CI (0.000 - 0.314) (Appendix 8).

4.3.4 Relationship between quality of life and service delivery

In the findings, we hypothesized a relation between quality of life and service delivery among health workers at Butabika national referral hospital and proceeded to test the relationship using Pearson rank correlation test. The findings obtained are presented in (Table 4.6).

Table 4.6: Pairwise correlation results of quality of life and service delivery

		Quality of life	Service delivery
Quality of life	Pearson Correlation	1	0.576**
	Sig. (2-tailed)		0.000
	N	198	198
Service delivery	Pearson Correlation	0.576**	1
	Sig. (2-tailed)	0.000	
	N	198	198

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

Quality of life and service delivery have a positive and substantial association, according to the results of the pairwise correlation matrix (Table 4.6) ($r = 0.576^{**}$, $p < 0.01$). This implies that any improvement in aspects of life quality like stress, anxiety, and depression would lead to an improvement in the provision of services like accurate diagnosis and patient care. Consequently, the study disproves the null hypothesis and supports the alternative, which claims that there was a substantial positive relation between the health care professionals' quality of life and the services they provide during the COVID 19 epidemic.

A hierarchical regression model was also utilised to ascertain how service delivery is impacted by quality of life. Since it demonstrates how the variables are related, it was chosen.

The model's results show that, when all other factors are held constant, quality of life accounted for 32.8% (Adjusted R) of the variability in service delivery. This suggests that additional factors not taken into account in this study account for the remaining 67.2% of the variability in service delivery (Table 4.7). Regarding the aforementioned approach, the quantitative results demonstrated the significance of quality of life in terms of care delivery at Butabika Referral Hospital during the COVID-19 pandemic.

Table 4.7: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.576 ^a	0.331	0.328	2.14117	0.331	97.175	1	196	0.000

a. Predictors: (Constant), Quality of life

4.4 Challenges faced during healthcare service delivery by healthcare workers as a result of the COVID 19 pandemic

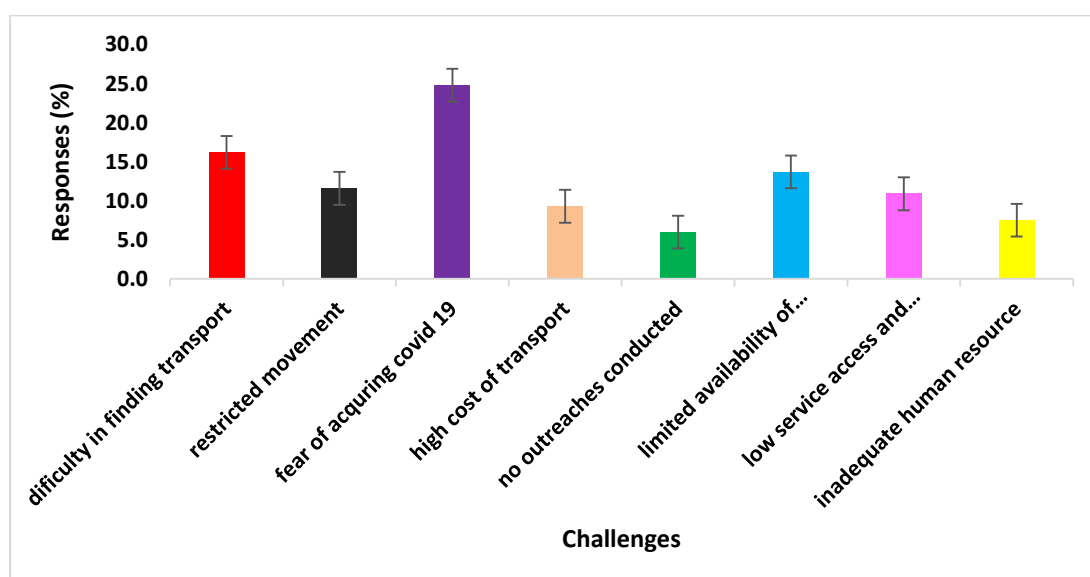


Figure 4.7: Relationship between the challenges during the pandemic

From the results in the figure 4.7 above there is a significant difference between the challenges faced during healthcare service delivery by healthcare workers as a result of the pandemic.

4.4.1 Structural barriers

4.4.1.1 Mobility hindrances

According to the respondents, service providers faced difficulties getting to the institution where mental health treatments were to be provided because of mobility obstacles. Findings also indicated restricted mobility, high transportation expenses, and difficulties obtaining transportation.

4.4.1.2 Difficulty in finding transport means

According to the report, most health personnel who stayed away from the institution had very little access to transportation during the early months of the lockdown. Moreover, it was somewhat difficult to go to the facilities.

“Health workers had to move to the facility no matter the distance. They were unable to accomplish it with ease, though. Due to delays, it somewhat impacted the provision of services, and ultimately, the services were undoubtedly unavailable”. (Psychiatric 2)

Furthermore, because motorbikes and other vehicles were prohibited from carrying passengers, respondents said they were unable to locate a way for service providers to take them to medical facilities.

4.4.1.3 High cost of transport

Due to the transportation prohibition, it became more difficult to get transportation, which increased the cost of transportation. The majority of respondents stated that health professionals' incapacity to cover the high expense of transportation because to delayed allowances.

“Regarding access, we had challenges with accessing the health facility because the transport fares had been hiked and we had not received our allowances. When travel costs increase, it becomes more difficult for those of us who live far away to commute to work”. (nurse 7)

4.4.1.4 Restricted Movement

Movement was limited as a preventive step against COVID-19, and in order for someone to travel, they needed to receive a notice from the Resident District Commissioner allowing them to enter the medical institution. Moreover, curfew hours restricted the amount of time medical personnel could spend tending to patients.

“Health personnel were impacted by lockdown; while they were granted permission to move about, some of them had limitations. When physicians and nurses used to be prevented by police from getting to work. This totally affected service delivery”. (Clinician 6)

4.4.1.5 Ministerial directives during the pandemic

During the epidemic, healthcare personnel were moved to manage "COVID 19 cases," which encouraged a refocusing of efforts on hospital operations and essential supplies for the pandemic. Medical staff members were allocated to different clinical duties, such as participating in COVID 19 reaction teams at different hospitals. In the context of relocating staff, there was a surge in the psychiatric service delivery at the facility.

Resources for mental health were even more short as a result of the reorganisation of services, even in hospital departments that were deemed to have "well-staffed" staff during the epidemic (psychiatrist 1).

4.4.2 Organizational barriers

4.4.2.1 No Outreaches Conducted

Early on in the lockdown, no outreach was carried out since social gatherings were prohibited under COVID-19 normal operating procedures. Furthermore, in order to reach out to the people, neither health facilities nor implementing partners that offered outreach services were successful.

We had a significant hurdle during the lockdown: we had to halt all of our mental health outreach programmes. At that time, we only concentrated on raising public awareness about COVID-19. (Clinician 4)

4.4.2.2 Mental health service interruption

Service interruptions were also seen at the health facility: *“some medical departments were closed”* (psychiatric 2). Participants said that these closures made the area less accessible to patients. Psychiatrists were unable to see new patient requests for consultations during the first wave due to the closure of the hospital's outpatient section. This service disruption lasted for many weeks and resulted in longer wait times.

4.4.2.3 Limited Availability of mental health Commodities

Because the public does not use mental health services very often, several respondents stated that they are available. Conversely, there were shortages of some supplies in certain hospital departments. It was impossible to get mental health supplies to the prison under the tight lockdown.

Since vehicles were occasionally being provided, I don't think it had a significant effect on the availability of supplies. I'm not sure if COVID-19 actually had an impact on National Medical Stores' delivery, but the store was open. Furthermore, I doubt that our commodities were much impacted; rather, access to the commodities was impacted. (Psychiatric 1)

4.4.3 Provider barriers

4.4.3.1 Inadequate human resource or health workers

During the lockdown, there weren't many medical personnel working at the hospital. The health centre was inaccessible to medical personnel because of transportation restrictions and social distancing policies. There weren't enough

medical staff members in some wards and sections of the hospital to care for patients seeking mental health treatments.

The fact that the same healthcare professionals who are doing other duties at the facility are also required to perform mental health treatments. However, we also had to change as a healthcare facility. You cannot continue to concentrate solely on mental health while members of the community are receiving COVID-19. (Psychiatric 2)

4.4.3.2 Mental health staff on leave

Participants mentioned that medical and preventative leaves—which refer to confinement due to the SARS-CoV2 infection—were often taken by mental health professionals. The two-week preventive leave added to the workload for the remaining employees. Participants also mentioned that, compared to physical concerns prior to the pandemic, psychiatric health workers, including those at the hospital, were more frequently placed on leave for psychiatric health issues during the epidemic:

“Prior to [the epidemic], first-line workers' absences were primarily due to medical issues [..]. [but] there is a lot more fatigue and burnout at work now than there was before COVID” (psychiatric 1)

Physician availability and provider mental health capabilities were less available for personal engagement during the first pandemic wave due to the closure of hospitals or the shift of healthcare workers to the COVID-19 response.

Health managers who wore both a clinician hat and a COVID-19 planner faced additional difficulties. In order to create COVID-19 strategies and standardise procedures at the regional level, there were frequent meetings with Ministry representatives and representatives from several regional sectors during the first pandemic wave. Their workload expanded dramatically as a result of these administrative duties added to their obligations in medical practice.

4.4.4 Patient barriers

4.4.4.1 Low mental health service access and utilization

The study states that, especially during the lockdown, there was a poor degree of access to and usage of mental health services. Nevertheless, the facility's use of psychiatric health services grew after the lockdown was loosened. Results also reveal that a number of patients neglected to schedule their next mental health visits and that others neglected to replenish their mental health supplies for those who were travelling from home.

Even now, the movement limitations have an impact on the psychiatric health service users' ability to continue taking their prescription. Consequently, it was challenging for individuals under lockdown to obtain their medications. This has an impact on their ability to continue receiving and using mental health treatments (Clinician 2)

During the lockdown, patients were coming to us for mental health assistance. They were using mental health services, but not often, particularly in April and May when there was a [complete] lockdown. (Clinician 5)

Impact of pandemic on consultations

Participants reported that during the first wave, fewer persons saw doctors due to a variety of reasons, including fear of the pandemic and because

“People waited for the epidemic to end because they believed it would be brief” (nurse 2).

“In the initial wave, individuals with psychiatric health disorders were so terrified of what was happening outside that they dared not venture outdoors” (psychiatric 4).

“I saw psychotic people skipping their scheduled appointments for medication refills” (psychiatric 1).

4.4.4.2 Technological modalities for service delivery provide hurdles to innovation.

Technology-based methods for providing psychiatric health services When it comes to patient care, technological modalities such as phone or video conferences with doctors in place of in-person consultations may overlook crucial information that is mostly conveyed by nonverbal cues:

“Lack of nonverbal cues about the patient's condition, negligence, and lack of washing for both new and problematic situations, I believe that seeing the patient in person gives us a better insight” (clinician 1).

With this kind of treatment modality, patients who were older or without the materials or email address necessary to utilise internet platforms were disadvantaged.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1: Discussion

5.1.1: Level psychiatric services delivery during the COVID 19 pandemic

This study looked at the short-term effects of COVID-19 on the use of mental health services in Butabika referral hospital, specifically in terms of service delivery delivery, using electronic health records.

Early in the lockdown's implementation, there was a noticeable decline in the number of appointments received for mental health services; as a result, 6.6% fewer individuals were received care in Uganda. This was consistent with a study by Bauer – Staeb *et al.*, (2020) where fewer patients accessed services during the lockdown in the United Kingdom. When patients were unable to access medical facilities for mental health services—during the lockdown, motorbikes and other private and public vehicle travel were prohibited—the number of appointments decreased even more, making it more difficult for patients to access psychiatric services while they were away from their homes. Distance to a medical facility has been identified as a deterrent to the use of health services, such as psychiatric care, in Uganda (Kabagenyi et al., 2022). It was difficult to walk great distances to medical institutions during the lockdown in order to receive psychiatric services, which made the use of those services more difficult. Apart from the possibility of an excess of individuals seeking mental health assistance when the enduring consequences of COVID-19 became apparent, this decrease may have placed more burden on providers of services to handle these patients in the future. It seems that the care of

patients that received treatment showed transient disturbances despite declines in the number of persons seeking services, with agencies swiftly transitioning to offer remote consultations.

Compared to the similar period in August 2021 and lower, there was an overall 6.6% decrease in appointments received in the eight weeks after lockdown. About a week before the lockdown was declared, the number of appointments started to fall, and three weeks later, it hit its peak. While this is smaller, it is consistent with a nationwide pattern seen by Eldridge (2020) Referrals dropped by over 70% in the patient management software used by the majority of IAPT programmes immediately after the lockdown was implemented. This difference in the percentage could be attributed to the variations in the study periods of the study of which Eldridge did his study during the first lockdown of the pandemic while this study was carried out in the second lockdown.

There are trends in the provision of mental health services that are comparable to those seen in other health services, such as fewer patients visiting general practice and accident and emergency rooms (Charlesworth, 2020; The Health Foundation, 2020). After the lockdown was lifted, the number of appointments seemed to progressively rise once more, albeit it never quite returned to baseline. By the end of February 2022, compared to December 2021, appointments had increased by 1.2%. Despite the appointment rate decreasing during the lockdown, there was a gradually increasing number of patients attending psychiatric treatment from September 2021 to February 2022; this kept increasing generally the monthly number of patients on treatment. This rise in treatment requests was a result of the pandemic's increased number of

patients with mental health issues, which may have been exacerbated by the stress and depression brought on by infection control measures implemented by the Ugandan Ministry of Health and the World Health Organisation, such as physical separation and fear of dying from COVID-19 (Yang et al., 2020), the impact of social change, social rejection, living alone, job loss, economic downturn, and people's financial difficulties (O'Connor & Kirtley, 2018; Turecki & Brent, 2016) however, the patients attending psychiatric treatment kept decreasing as the economy came back to its normal stand.

While the COVID-19 shutdown clearly affected those seeking primary mental health care, it seems that there was less of an impact on the provision of care for patients who were receiving treatment before to the lockdown or who were beginning treatment during it, as providers swiftly adjusted to the new protocols. Since the study concentrated on the second shutdown, the government and the ministry of health (MoH) may have implemented steps primarily because they had previously learned from previous pandemic tendencies.

5.1.2: Stress, anxiety and depression of psychiatric healthcare workers during the pandemic

This study illustrates the diverse impacts of the COVID-19 pandemic on the mental health of healthcare workers (HCWs), including doctors, nurses, clinicians, and other HCWs. According to the study, during the COVID-19 pandemic, more than 90% of healthcare professionals said they were likely to report moderate-to-high levels of perceived stress, compared to about 4% who said they were likely to report moderate-to-severe levels of anxiety and more

than 2/3 who said they were likely to report moderate-to-high levels of depressive symptoms. The thorough study by Muller et al. (Muller et al., 2020) found that the median prevalence of mental health distress ranged from 7% to 97%. The frequencies of depressive disorders and anxiety among HCWs, which were 34.8% and 69.7%, respectively, in our study, were not comparable to the medians identified in the two previously mentioned systematic reviews (Muller et al., 2020; Pappa et al., 2020). While the frequency of depression was much greater than in a similar research by El Gindi et al., the prevalence of anxiety was comparable (El Gindi et al., 2022). According to a Wuhan health care provider study, 50.4% of frontline healthcare workers reported having depression symptoms; this percentage was correlated with both female gender and the nursing profession (Lai et al., 2019). The demographics of the community may help to explain this low number in Butabika Hospital when compared to the study's prevalence of depression. The majority of the participants were female nurses with junior technical titles that may be seen as boosting Risk factors for the development of COVID-19 exposure.

Nurses had the least prevalence of anxiety in this study (24/98 (24.5%)), followed by doctors (5/17 (29.5%)) and was highest among clinicians (15/21 (71.4%)). This finding was not in accordance with studies that showed physicians with the lowest prevalence of anxiety followed nurses, (El Gindi *et al.*, 2022; Pappa *et al.*, 2020), this variation in lowest prevalent group could have been due to variation in the study settings and the variation in study populations used in the studies. In their systematic study, Pappa et al. observed almost comparable trends in the prevalence of anxiety among nurses, with

25.8% of nurses afflicted (Pappa et al., 2020). In this study, the lowest prevalence of depression was seen in clinicians (12/21, or 5.7.2%), followed by Physicians (9/15 (60.0%)) and was highest among other HCWs (36/47 (76.6%)). This finding was contrary with the study by El Gindi et al., (2022) concerning the lowest prevalence of depression as they found the physicians with the lowest prevalence in their study (El Gindi et al., 2022). This was influenced by the difference in the study population.

Severe symptoms of clinical depression, anxiety, and persistent post-traumatic stress disorder have been recorded among health care workers (HCWs), first responders, and other frontline staff, and suicide thoughts by health facilities in China, the US, and other countries (Liu et al., 2020; Wan, 2020; Rossi et al., 2020). This is supported by the study, which found that compared to other health professionals, physicians, nurses, and clinicians experienced higher rates of anxiety during the pandemic. Research has shown that emergency department physicians and nurses are more likely to have mental health issues in certain situations (Ho et al., 2020; Lai et al., 2019).

Compared to other healthcare professionals, psychiatrists and mental health service providers have a greater risk of burnout due to work-related emotional weariness (Deary et al., 1996). Individuals who are drawn to the field of psychiatry may also possess stress-prone personality traits including neuroticism (Kumar et al., 2005). First responder nurses and doctors were more likely to have behavioural disengagement during comparable epidemics than frontline physicians and other health workers were. This was strongly linked to elevated anxiety levels (Wong et al., 2005). This could be brought on by stress, worry about becoming sick or infecting their family, feeling unsure

and stigmatised, and so on (Lai et al., 2019). According to this study, nurses and doctors in Wuhan, China during the COVID-19 epidemic were also shown to have greater levels of a number of psychological consequences, including as anxiety, sadness, distress, and sleeplessness, as compared to their physician counterparts (Lai et al., 2019). Compared to their male counterparts, female survey respondents (116/198, 58.6%) were less likely to experience symptoms of stress, anxiety, and depression. This was only statistically significant, though, for less probable worry. For instance, (Pappa et al., 2020) combined the prevalence from six studies that provided comprehensive data on anxiety symptoms according to gender during the pandemic. According to a number of studies, the most frequent risk factors linked to an increase in psychiatric issues among HCWs during the pandemic were being a woman, being among people who had SARS-CoV-2 infection, and worrying about being sick (Muller et al., 2020).

Suicide deaths have increased in response to previous pandemics, such as SARS and influenza (Cheung et al., 2008; Klomek, 2020). Suicide deaths may be on the rise in conjunction with the ongoing epidemic. During the epidemic, there was a noted rise in the risk of suicide (Sher, 2020). Living alone, social rejection, and difficult life events are some possible influences on this (Turecki & Brent, 2016; Chang et al., 2013). This effect was evidenced in this study where by health workers that owned a home and lived with a family were more likely to experience depression than those staying in the hostels, mainly because they were not allowed to go to their families and socialise with fear of transmitting the pandemic to their families. This result was corroborated by a Wuhan research that found that stigma and elevated anxiety

were linked to mental health issues among healthcare professionals (Chen *et al.*, 2020).

Unemployment is another risk factor for depression, independent of the pandemic (Stuckler *et al.*, 2020). There was a noticeable downturn in the global economy as a result of the epidemic. Unemployment is generally linked to a weakening economy. In order to save costs, a few businesses in the industrial sector closed their doors or made changes like firing staff. Many people experienced job loss, and some of them are unable to handle their financial difficulties. The COVID-19 pandemic has resulted in a rise in both the unemployment and depression rates (Kawohl & Nordt, 2020; Gomis *et al.*, 2020; Blustein *et al.*, 2020) due to stress and worries of losing jobs. In this study the part timers at the health facility were more likely to be depressed than the full timers at the same health facility due fear of losing their jobs.

According to Kansime *et al.* (2020) and Nicola *et al.* (2020), the lockdown caused financial disruption among the populace in Uganda and other countries. The sources of revenue for every sector—including manufacturing, healthcare, schooling, vacations, activities such as sports, and information technology—saw a general fall. This resulted in the many sectors closing or declining, which had an effect on the GDP, poverty, and food insecurity of the nation (Kabagenyi *et al.*, 2022). Therefore the health workers were not able to be paid their salaries and allowances thus leaving them with pending utilities to be paid therefore depression arose. In this study health workers that were renting houses were more likely to be depressed due to the pandemic than those in the hostels due to fear of being chased out of the houses for not paying their dues.

5.1.3: Challenges faced in the healthcare service delivery due to the COVID 19 pandemic

During the COVID-19 shutdown in Uganda, mental health services were also stopped and deemed non-essential operations, as reported by Kabagenyi et al. (2023). The qualitative analysis attests to and provides proof of the pandemic-related interruptions in service delivery. Here, we go over the results on the five main themes of the Butabika Referral Hospital: structural, organisational, issues pertaining to patients and providers, as well as novel issues.

The challenges were categorised according to the classifications developed by Chaudoir et al. (2013) for concerns pertaining to innovation (technological modalities for service delivery), providers, patients, and organisational structures. The challenges included the impact of the pandemic on patient consultations (i.e., perceptions of increased demand), ministerial directions on access obstacles, the relocation of mental wellness staff to non-mental health-associated COVID-19 tasks, the shortage of mental health staff (structural), the discontinuation of mental health services (organisational), the mental health staff on preventive/medical leave (provider), and challenges with using technological modalities (innovation). Ministerial suggestions for practices to be implemented during the pandemic appeared to be the cause of many of the impediments to the delivery of mental health services that were found. The results demonstrate that, in order to offer mental health care, service providers were unable to enter health institutions. Health professionals' ability to get to and from work was restricted because to the lockdown's prohibition on private vehicle movement, which included motorbikes. This result was consistent with a Ugandan research (Kabagenyi et al., 2023).

While some of the problems with providing mental health services that were examined in this study had existed before the pandemic, others had developed and were made worse. The study highlights several pandemic challenges to the provision of mental health services, such as the disruption of mental health services (e.g., hospital outpatient clinics, community groups that are interrupted, or health facilities that close or change into COVID-19-related establishments). This barrier was also discovered globally in the context of the epidemic. The great majority (93%) of 130 nations surveyed by the World Health Organisation (WHO) reported interruptions to mental health services (WHO, 2020). Community-based services and outpatient services provided by general and mental health hospitals were the ones that were most severely affected. These service disruptions made it challenging to put some of the ministerial recommendations from Uganda into practice, which were intended to handle the anticipated increase in requests for mental health services during the epidemic. Increasing community-based, primary, and specialist care collaboration as well as, when appropriate, increasing community-based setting engagement in patient care were among these suggestions (MSSS, 2020).

The WHO study found that reasons relating to supply (such as reusing mental health facilities for COVID-19 projects, or redeployment of staff to assist with relief efforts) and demand (such as patients not consulting services) were responsible for service interruptions (WHO, 2020). The epidemic appears to have made other obstacles that the research found more difficult, such the shortage of mental health professionals due to their transfer to COVID-19-related jobs, their unpaid leave, and the closing of medical facilities and their

conversion to COVID-19-related businesses. Lack of mental health professionals has been noted as an issue in African nations, as well as in other nations around the world, even before the epidemic (Moroz et al., 2020).

The current study confirmed the effects of the pandemic on populations with pre-existing disparities in socioeconomic status and health as well as the broader public, as highlighted by Asmundon et al. (2020), Jenkins et al. (2021), Miconi et al. (2020), and Moyser (2020). Participants in the study also revealed that "new" patients, such as working parents with children, university students, and pupils in elementary and secondary schools, also sought psychological treatment during the epidemic. These findings align with other studies carried out elsewhere. Studies show that the epidemic has negatively impacted parents' mental health (Gadermann et al., 2020). Additionally, female respondents who had children under the age of 13 reported greater levels of anxiety and drug usage than male participants (MHCC, 2021). Secondly, according to Robillard et al. (2020), individuals who live alone and younger elders are highly likely to report having greater levels of depressive symptoms. Social isolation and financial difficulties were found to have a disproportionately negative effect on younger persons (Genereux et al., 2020). The pandemic's effects on a variety of individuals, with those with pre-existing medical conditions and social injustices, emphasise the necessity of implementing focused strategies for the provision of mental health treatment (Smith et al., 2021; Vigo et al., 2020).

5.2 Conclusion

5.2.1 Level of access to psychiatric services

This study found a 6.6% decline in psychiatric service delivery during COVID-19 lockdowns, with access barriers and rising mental health needs. Remote care adaptations helped, but service delivery remained disrupted post-lockdown.

5.2.2 Stress, anxiety and depression of psychiatric healthcare workers

The effect of COVID-19 on healthcare personnel' overall and mental health at Butabika Referral Hospital was investigated in this cross-sectional research. The study's overall findings emphasised how common psychological distress symptoms were during the COVID-19 epidemic. Anxiety was shown to be highly prevalent among nurses, physicians, and other healthcare professionals throughout the epidemic. The study identified several risk variables for psychological discomfort, including gender, part-time employment, family living, and renting as a health professional.

5.2.3 Challenges faced in the healthcare service delivery

The COVID-19 pandemic has a significant and immediate impact on the delivery of mental health care. This is the first research to examine the difficulties in providing mental health services at the Butabika Referral Hospital during the epidemic. A number of the obstacles that were noted resulted from the pandemic (e.g., obstructions to travel, transfer of mental health personnel to COVID-19 responsibilities unrelated to mental health, disruptions to mental health services, and mental health personnel on

preventative leave). Other problems that seemed to have been part of the mental health system even before the pandemic but were exacerbated by it included the accessibility of mental health care employees given their relocation to COVID-19 related tasks, mental health personnel being on leave, and clinic closures/transformation to COVID-19 related establishments.

5.3 Recommendations

5.3.1 Level of access to psychiatric services

To enhance psychiatric service delivery, mobile mental health clinics and tele-psychiatry should be implemented to ensure continued access to care during emergencies.

Strengthening mental health infrastructure by increasing funding for psychiatric facilities and integrating mental health services into primary healthcare can improve accessibility.

Additionally, developing contingency plans for future pandemics, including clear guidelines for maintaining mental health services during lockdowns, is crucial.

Healthcare workers should receive psychological support programs, stress management training, and adequate staffing to reduce burnout.

Public awareness campaigns should be conducted to educate communities on the importance of mental health and available remote care options.

Establishing robust monitoring systems to track psychiatric service utilization trends can help identify gaps and improve service delivery.

Ministry of Health should implement policies that prioritize mental healthcare, particularly during public health emergencies, to ensure long-term improvements in psychiatric care.

5.3.2 Stress, anxiety and depression of psychiatric healthcare workers

To mitigate the mental health impacts of COVID-19 on healthcare workers (HCWs), it is essential to establish comprehensive mental health support systems, including counseling services, peer support programs, and stress management training.

Governments and healthcare institutions should integrate mental health services into routine healthcare provisions, ensuring HCWs have access to psychological support.

Workplace interventions, such as reducing workload, ensuring adequate staffing, and improving working conditions, can help alleviate stress and burnout.

Additionally, financial support measures, including timely salary payments and allowances, should be prioritized to reduce financial-related depression among HCWs.

Awareness campaigns should be conducted to address stigma associated with seeking mental health care, and policies should be developed to safeguard HCWs' well-being, particularly during public health crises.

Further research should be conducted to explore long-term psychological effects and the effectiveness of intervention strategies, ensuring that future pandemics or crises do not severely impact the mental health of HCWs.

5.3.3 Challenges faced in the healthcare service delivery

To strengthen mental health service delivery during pandemics, it is crucial for the Ugandan government and health authorities to classify mental health services as essential to ensure their continued operation.

Expanding community-based mental health services and integrating them into primary healthcare can help mitigate disruptions, ensuring accessibility even during crises.

Additionally, policies should be put in place to prevent the reassignment of mental health professionals to non-mental health-related pandemic response roles, preserving service continuity.

The adoption of telemedicine, including telepsychiatry, mobile health platforms, and online counseling services, should be prioritized to bridge service gaps caused by movement restrictions.

Providing special movement permits or dedicated transport for mental health professionals can also help ensure they can reach healthcare facilities during lockdowns.

Furthermore, mental health facilities should not be repurposed for pandemic-related services without alternative arrangements to sustain mental health care.

Economic and psychosocial support programs should be integrated with mental health services, particularly for vulnerable populations such as parents, students, and individuals facing financial distress.

Public education campaigns should also be conducted to reduce stigma and encourage people to seek mental health care.

Strengthening multi-sectoral collaboration between the ministries of health, education, and social services can facilitate policies that ensure continued mental health support during emergencies.

Lastly, ongoing research and evaluation should be conducted to assess the long-term impact of pandemics on mental health and improve emergency preparedness plans. These measures will help create a more resilient mental health system capable of withstanding future public health emergencies.

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APPENDICES

Appendix 1: Informed Consent

Informed Consent to Participate in Research

I am/We are asking you to take part in a research study called:

COVID – 19 pandemic effects on the mental healthcare service delivery at Butabika national referral hospital

The person who is in charge of this research study is Otai James. The research will be conducted at Butabika national referral hospital, Uganda.

Purpose of the study

The purpose of this study is to:

- To determine the level of access to psychiatric services and service delivery during the COVID 19 pandemic.
- To examine the mental health among psychiatric healthcare workers during the pandemic
- To document the challenges faced in the management of healthcare workers during the COVID 19 pandemic at Butabika national referral hospital.

Study Procedures

You are being asked to participate in this study, as you are a part of staff who can help us to better acquire the COVID – 19 pandemic effects on the mental healthcare service delivery

If you take part in this study, you will be asked to:

- Take part in answering semi-structured questionnaire;
- Filling in the questionnaire will take approximately 20 minutes;
- The questionnaire will be provided at the hospital and filled in from the hospital at a time and place most convenient to you as the participant;
- The questionnaire will contain open ended, closed ended and likert scale type of questions;

Benefits

There may be no direct benefits associated with your participation in the study, but the information you will provide will be useful in planning and organizing better service delivery at the hospital.

Risks or Discomfort

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

Compensation

No research participants will be compensated. However they will be provided with some drinks and snacks for those taking part in the interview.

Privacy and Confidentiality

We will keep your study records private and confidential. Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

The research team, including the Principal Investigator and those involved with the study.

I may publish what I have learnt from this study. If I do, I will not include your name. I will not publish anything that would let people know who you are. I will not disclose any mental condition of the participants in whatever condition

Voluntary Participation / Withdrawal

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time.

There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

You can get the answers to your questions, concerns, or complaints

If you have any questions, concerns or complaints about this study, or experience an adverse event or unanticipated problem, contact the researcher on 0772976705

If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the executive secretary of UNCST on (0414-705500) or TASO REC chairperson Dr. Jjuuko Adrian on Tel;0782169505 ;email; jjuukoa@gmail.com.

Assessment of understanding

Please check which box best describes your assessment of understanding of the above informed consent document:

☐

I have read the above informed consent document and understand the information provided to me regarding participation in the study and benefits and risks. I give consent to take part in the study and will sign the following page.

☐

I have read the above informed consent document, but still have questions about the study; therefore I do not give yet give my full consent to take part in the study.

Signature of Person Taking Part in Study

Date

Printed Name of Person Taking Part in Study

Thumb print of Person Taking Part in Study

Signature of Person Obtaining Informed Consent / Research Authorization
Date

Printed Name of Person Obtaining Informed Consent / Research Authorization

Appendix 2: Document Review Guide

Date of review: ____/____/____

Issue: This section intends to determine the trends of patient's treatment at Butabika national referral hospital.

Period:

Month: _____ **Year:** _____

Review number: _____

Date	Patients with appointments for treatment	Period on treatment	Patients who attended	Male	Female	Age of patient

Date of review: ____/____/____

Issue: This section intends to determine the trend of patient's diagnosed with mental health during lockdown at Butabika national referral hospital.

Period:

Month: _____ **Year:** _____

Review number: _____

Date	Patients with mental health	Male	Female	Age of patient	Comments

Appendix 3: Questionnaires

Participant's id: _____

Socio demographic characteristics

Gender

Female ☐

Male ☐

Age

18 – 29 ☐

30 – 44 ☐

45 – 60 ☐

> 60 years ☐

Education level

Certificate ☐

Bachelor's degree ☐

Master's degree ☐

PhD ☐

Other, specify; _____

Marital status

Married/cohabiting/partnered ☐

Separated/divorced ☐

Widowed ☐

Single ☐

Religion

Catholic ☐

Anglican ☐

Muslim ☐

Seventh day Adventist ☐

☐

Orthodox

Other, specify; _____

Housing status

Own home ☐

Living with family ☐

Renting ☐

Other, specify; _____

Profession

Doctor ☐

Nurse ☐

Physician ☐

Other, specify; _____

Total experience

1 – 5 ☐

6 – 10 ☐

11 – 15 ☐

16 – 20 ☐

> 20 years ☐

Working time

Part time ☐

Full time ☐

Change in volume of work compared to normal conditions

Worked less ☐

No change ☐

Worked more ☐

Perceived stress scale (PSS – 10)

		Never	Almost Never	Sometimes	Fairly Often	Very Often
1.	In the last month, how often have you been upset because of something that happened unexpectedly					
2.	In the last month, how often have you felt that you were unable to control the important things in your life?					
3.	In the last month, how often have you felt nervous and “stressed”?					
4.	In the last month, how often have you felt confident about your ability to handle your personal problems?					
5.	In the last month, how often have you felt that things were going your way?					
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?					
7.	In the last month, how often have you been able to control irritations in your life?					
8.	In the last month, how often					

	have you felt that you were on top of things?					
9.	In the last month, how often have you been angered because of things that were outside of your control?					
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

Generalised Anxiety Disorder scale (GAD – 7)

	Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1.	Feeling nervous, anxious, or on edge				
2.	Not being able to stop or control worrying				
3.	Worrying too much about different things				
4.	Trouble relaxing				
5.	Being so restless that it is hard to sit still				
6.	Becoming easily annoyed or irritable				
7.	Feeling afraid, as if something awful might happen				

Patient health questionnaire (PHQ – 9)

	Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1.	Little interest or pleasure in doing things				
2.	Feeling down, depressed, or hopeless				
3.	Trouble falling or staying asleep, or sleeping too much				
4.	Feeling tired or having little energy				
5.	Poor appetite or overeating				
6.	Feeling bad about yourself or that you are a failure or have let yourself or your family down				
7.	Trouble concentrating on things, such as reading the newspaper or watching television				
8.	Moving or speaking so slowly that other people could have noticed.				
9.	Thoughts that you would be better off dead, or of hurting yourself				

Appendix 4: Interview Guide

Interview Date: _____

Interview ID: _____

Gender: _____

Occupation:

Years of experience: _____

1. Worked from the start of the COVID – 19 pandemic
2. Did you work normally or were inconvenienced during the COVID – 19 pandemic?
3. Did you acquire any COVID – 19 signs and symptoms in the course of the work?
4. If ‘YES’ were you quarantined?
5. If ‘YES’ was it in the same hospital?
6. In your view do you think Butabika hospital is handling COVID – 19 pandemic prevention and treatment just like other referral hospital?
7. Please rate the extent to which you think Butabika hospital is handling the COVID – 19 pandemic
8. In your view what do you think really is inconveniencing the proper provision of services to the psychiatric patients during the COVID – 19 pandemic?

9. Are there some mechanisms that have been put in place by the hospital to help the staffs who are handling the patients to provide them with services without being infected or inconvenienced?
10. What are some of those mechanisms?
11. In your view are you satisfied with the efficiency, effectiveness or availability of the mechanisms to the psychiatric staff?
12. In conclusion what do you think the government can do to help the hospital staff provide services to patients safely in case of future pandemics or even in the current condition of the COVID – 19 pandemic?

Appendix 5: Depression

		B	Std. Error	Wald	Sig.	Odds ratio	95% Confidence Interval for OR	
							Lower Bound	Upper Bound
Gender	Female	-.121	.451	.073	.788	.886	.366	2.144
	Male	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age	18 - 29 years	-.665	1.250	.283	.595	.514	.044	5.956
	30 - 44 years	.153	1.098	.019	.889	1.165	.135	10.027
	45 - 60 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Education level	Certificate	.077	.544	.020	.887	1.080	.372	3.141
	Bachelor's degree	-.603	.611	.973	.324	.547	.165	1.812
	Master's degree	-2.276	1.009	5.085	.024	.103	.014	.742
	PhD	-17.684	6547.270	.000	.998	2.090E-008	.000	. ^c
	Diploma	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Marital status	Married	-1.154	.665	3.017	.082	.315	.086	1.160
	Divorced/Seperated	-.646	1.501	.185	.667	.524	.028	9.927
	Widowed	-18.014	7544.766	.000	.998	1.502E-008	.000	. ^c
	Single	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Religion	Catholic	-16.364	3273.622	.000	.996	7.822E-008	.000	. ^c
	Anglican	-15.808	3273.622	.000	.996	1.364E-007	.000	. ^c
	Muslim	-16.687	3273.622	.000	.996	5.662E-008	.000	. ^c
	Seventh Day Adventist	-18.037	3273.622	.000	.996	1.467E-008	.000	. ^c
	Born again	-17.183	3273.622	.000	.996	3.447E-008	.000	. ^c
	Isa Messiah	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Housing status	Own home	16.590	.869	364.842	.000	16023195.399	2920517.615	87910029.895
	Living with family	14.649	.817	321.330	.000	2301187.430	463816.917	11417141.961

	Renting	15.855	.865	335.844	.000	7688529.484	1410603.054	41906534.571
	Staff quarters	14.887	.000	.	.	2920083.926	2920083.926	2920083.926
	Hostel	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Profession	Doctor	.620	.856	.524	.469	1.859	.347	9.958
	Nurses	-.278	.583	.228	.633	.757	.242	2.373
	Physician	.928	.827	1.257	.262	2.529	.500	12.797
	Clinician	.642	.733	.767	.381	1.900	.452	7.994
	Others	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Total Experience	1 - 5 years	-.788	1.444	.298	.585	.455	.027	7.704
	6 - 10 years	-1.132	1.297	.762	.383	.322	.025	4.094
	11 - 15 years	-1.023	1.246	.673	.412	.360	.031	4.138
	16 - 20 years	.367	1.410	.068	.795	1.443	.091	22.884
	> 20 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Working time	Part time	1.682	.686	6.023	.014	5.378	1.403	20.613
	Full time	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Change in volume of work	Worked less	.165	.770	.046	.830	1.180	.261	5.336
	No change	.204	.522	.153	.696	1.227	.441	3.413
	Worked more	ref.	ref.	ref.	ref.	ref.	ref.	ref.

Appendix 6: Anxiety

		B	Std. Error	Wald	Sig.	Odds ratio	95% Confidence Interval for OR	
							Lower Bound	Upper Bound
Gender	Female	-2.646	.965	7.515	.006	.071	.011	.470
	Male	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age	18 - 29 years	-1.456	1.738	.702	.402	.233	.008	7.031
	30 - 44 years	-.503	1.627	.096	.757	.605	.025	14.670
	45 - 60 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Education level	Certificate	-.377	.942	.160	.689	.686	.108	4.346
	Bachelor's degree	.017	.931	.000	.986	1.017	.164	6.309
	Master's degree	-.727	1.250	.338	.561	.484	.042	5.602
	PhD	16.660	5531.943	.000	.998	17185657.287	.000	. ^c
	Diploma	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Marital status	Married	-1.285	1.200	1.146	.284	.277	.026	2.907
	Divorced/Seperated	16.220	3977.840	.000	.997	11075851.435	.000	. ^c
	Widowed	15.355	3187.220	.000	.996	4660484.764	.000	. ^c
	Single	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Religion	Catholic	-9.033	3193.870	.000	.998	.000	.000	. ^c
	Anglican	-8.973	3193.870	.000	.998	.000	.000	. ^c
	Muslim	-9.863	3193.870	.000	.998	5.205E-005	.000	. ^c
	Seventh Day Adventist	-11.515	3193.870	.000	.997	9.977E-006	.000	. ^c
	Born again	-6.929	3193.870	.000	.998	.001	.000	. ^c
	Isa Messiah	ref.	ref.	ref.	ref.	ref.	ref.	ref.

Housing status	Own home	-18.824	3523.970	.000	.996	6.680E-009	.000	. ^c
	Living with family	-19.864	3523.970	.000	.996	2.361E-009	.000	. ^c
	Renting	-17.683	3523.970	.000	.996	2.092E-008	.000	. ^c
	Staff quarters	-19.301	3523.970	.000	.996	4.147E-009	.000	. ^c
	Hostel	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Profession	Doctor	2.802	1.414	3.928	.047	16.478	1.032	263.189
	Nurses	3.220	1.018	10.005	.002	25.023	3.403	183.991
	Physician	17.371	1111.694	.000	.988	35009009.654	.000	. ^c
	Clinician	.861	1.439	.358	.549	2.367	.141	39.746
	Others	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Total Experience	1 - 5 years	2.834	2.234	1.609	.205	17.020	.213	1357.839
	6 - 10 years	-.157	1.927	.007	.935	.854	.020	37.336
	11 - 15 years	1.207	1.825	.437	.509	3.342	.093	119.559
	16 - 20 years	1.418	2.099	.456	.500	4.127	.067	252.745
	> 20 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Working time	Part time	-1.795	.998	3.238	.072	.166	.024	1.174
	Full time	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Change in volume of work	Worked less	-.515	1.261	.167	.683	.598	.050	7.082
	No change	-.782	.803	.948	.330	.458	.095	2.208
	Worked more	ref.	ref.	ref.	ref.	ref.	ref.	ref.

Appendix 7: Mild anxiety

		B	Std. Error	Wald	Sig.	Odds ratio	95% Confidence Interval for OR	
							Lower Bound	Upper Bound
Gender	Female	-2.212	1.089	4.123	.042	.110	.013	.926
	Male	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age	18 - 29 years	12.622	1251.219	.000	.992	303023.152	.000	. ^c
	30 - 44 years	14.704	1251.219	.000	.991	2432463.428	.000	. ^c
	45 - 60 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Education level	Certificate	1.694	1.195	2.007	.157	5.439	.522	56.616
	Bachelor's degree	.378	1.221	.096	.757	1.459	.133	15.961
	Master's degree	1.777	1.496	1.411	.235	5.914	.315	111.044
	PhD	5.962	7176.461	.000	.999	388.377	.000	. ^c
	Diploma	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Marital status	Married	1.843	1.451	1.612	.204	6.313	.367	108.549
	Divorced/Seperated	22.653	3977.840	.000	.995	6886167336.741	.000	. ^c
	Widowed	1.141	4572.510	.000	1.000	3.130	.000	. ^c
	Single	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Religion	Catholic	6.217	4143.333	.000	.999	501.300	.000	. ^c
	Anglican	5.481	4143.333	.000	.999	240.166	.000	. ^c
	Muslim	2.974	4143.333	.000	.999	19.576	.000	. ^c
	Seventh Day Adventist	2.827	4143.332	.000	.999	16.887	.000	. ^c
	Born again	8.817	4143.333	.000	.998	6747.043	.000	. ^c
	Isa Messiah	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Housing status	Own home	-4.428	1.546	8.199	.004	.012	.001	.247
	Living with family	-2.842	1.326	4.592	.032	.058	.004	.785

	Renting	-1.194	1.570	.578	.447	.303	.014	6.575
	Staff quarters	-.297	.000	.	.	.743	.743	.743
	Hostel	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Profession	Doctor	4.117	1.805	5.203	.023	61.365	1.785	2109.277
	Nurses	3.081	1.262	5.960	.015	21.784	1.836	258.491
	Physician	18.906	1111.694	.000	.986	162486880.895	.000	. ^c
	Clinician	4.327	1.612	7.203	.007	75.739	3.213	1785.422
	Others	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Total Experience	1 - 5 years	-10.207	1251.220	.000	.993	3.692E-005	.000	. ^c
	6 - 10 years	-16.353	1251.220	.000	.990	7.904E-008	.000	. ^c
	11 - 15 years	-15.189	1251.219	.000	.990	2.533E-007	.000	. ^c
	16 - 20 years	-15.169	1251.220	.000	.990	2.584E-007	.000	. ^c
	> 20 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Working time	Part time	-2.332	1.252	3.469	.063	.097	.008	1.130
	Full time	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Change in volume of work	Worked less	-.341	1.750	.038	.845	.711	.023	21.955
	No change	-1.259	1.051	1.434	.231	.284	.036	2.228
	Worked more	ref.	ref.	ref.	ref.	ref.	ref.	ref.

Appendix 8: Stress

		B	Std. Error	Wald	Sig.	Odds ratio	95% Confidence Interval for OR	
							Lower Bound	Upper Bound
Gender	Female	-1.099	1.178	.871	.351	.333	.033	3.352
	Male	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Age	18 - 29 years	1.481	1.960	.571	.450	4.397	.094	204.719
	30 - 44 years	2.731	1.845	2.190	.139	15.349	.412	571.307
	45 - 60 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Education level	Certificate	-3.787	1.629	5.401	.020	.023	.001	.552
	Bachelor's degree	-4.838	1.878	6.637	.010	.008	.000	.314
	Master's degree	-29.788	1261.416	.001	.981	1.156E-013	.000	. ^c
	PhD	-15.558	.000	.	.	1.751E-007	1.751E-007	1.751E-007
	Diploma	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Marital status	Married	21.256	857.496	.001	.980	1703556789.716	.000	. ^c
	Divorced/Seperated	4.129	3695.318	.000	.999	62.087	.000	. ^c
	Widowed	11.955	6948.025	.000	.999	155516.741	.000	. ^c
	Single	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Religion	Catholic	-2.292	6266.355	.000	1.000	.101	.000	. ^c
	Anglican	-9.094	6266.356	.000	.999	.000	.000	. ^c
	Muslim	-4.152	6266.355	.000	.999	.016	.000	. ^c
	Seventh Day Adventist	-21.865	6882.967	.000	.997	3.192E-010	.000	. ^c
	Born again	-3.469	6266.355	.000	1.000	.031	.000	. ^c
	Isa Messiah	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Housing status	Own home	-6.394	10825.288	.000	1.000	.002	.000	. ^c
	Living with family	-9.116	10825.288	.000	.999	.000	.000	. ^c

	Renting	-8.524	10825.288	.000	.999	.000	.000	. ^c
	Staff quarters	-22.732	10929.999	.000	.998	1.341E-010	.000	. ^c
	Hostel	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Profession	Doctor	-2.482	2.302	1.163	.281	.084	.001	7.615
	Nurses	-2.524	1.863	1.836	.175	.080	.002	3.087
	Physician	.656	2.284	.082	.774	1.927	.022	169.366
	Clinician	-19.738	1221.897	.000	.987	2.679E-009	.000	. ^c
	Others	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Total Experience	1 - 5 years	20.031	1279.542	.000	.988	500449329.633	.000	. ^c
	6 - 10 years	18.609	1279.542	.000	.988	120677112.618	.000	. ^c
	11 - 15 years	15.357	1279.541	.000	.990	4671646.584	.000	. ^c
	16 - 20 years	17.750	1279.542	.000	.989	51149582.769	.000	. ^c
	> 20 years	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Working time	Part time	5.193	2.773	3.506	.061	179.983	.785	41290.978
	Full time	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Change in volume of work	Worked less	-1.008	1.969	.262	.609	.365	.008	17.311
	No change	-.377	1.306	.084	.773	.686	.053	8.869
	Worked more	ref.	ref.	ref.	ref.	ref.	ref.	ref.