PSYCHOLOGICAL WELL-BEING AND COPING WITH SURGICAL STRESS OF THE PATIENTS AFTER OPEN HEART SURGERY

A Dissertation Submitted to the Faculty of Humanities and Social Sciences of Tribhuvan University in Fulfillment of Requirements for the Degree of

Doctor of Philosophy

in

PSYCHOLOGY

By

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LETTER OF RECOMMENDATION

We certify that this dissertation entitled **"Psychological Well-being and Coping with Surgical Stress of the Patients after Open Heart Surgery"** was carried out by Pratima Khatri under our guidance. We, hereby, recommend this dissertation for final examinations by the Research Committee of the Faculty of Humanities and Social Sciences, Tribhuvan University, in fulfillment of the requirements for the Degree of Doctor of Philosophy in Psychology.

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APPROVAL LETTER

This dissertation entitled **"Psychological Well-being and Coping with Surgical Stress of the Patients after Open Heart Surgery"** was submitted by Pratima Khatri for the final examination to the Research Committee of the Faculty of Humanities and Social Sciences, Tribhuvan University, in fulfillment of the requirements for the **Degree of Doctor of Philosophy in Psychology**. I, hereby, certify that the Research Committee of the Faculty has found this dissertation satisfactory in scope and quality and has therefore accepted it for the degree.

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Date:

DECLARATION

I hereby declare that the work contained in this dissertation entitled **"Psychological Well-being and Coping with Surgical Stress of the Patients after Open Heart Surgery"** is my bonafide work, and has not been previously submitted for the award of any other degree or certificate in any university. To the best of my knowledge, I assure you that this dissertation contains no materials previously published or written by other persons. This dissertation has been completed under the guidance of Prof. Dr. Nandita Sharma and Prof. Dr. Mohan Raj Sharma.

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DEDICATION

I dedicate this dissertation to my beloved grandparents, Late Muni Chandra Acharya, and Parbati Acharya as well as my parents, Himalaya Khatri and Janaki Devi Acharya (Khatri) for their endless love, struggle, and encouragement for the development of the foundation of my education and support throughout the life. I hope this achievement will fulfill the dream they envisioned for me.

म यो विधावारिधिको प्रतिवेदन मेरो बोव स्व. मणि चन्द्र आचार्य र बज्यू श्री पार्वती आचार्य तथा आमाबुवा श्री हिमालय खत्री र श्री जानकी देवी आचार्य खत्रीमा सर्मपित गर्दछु । मैले आधारभूत देखि उच्चस्तरीय शिक्षा आर्जन गर्न, उहाँहरु बिना असम्भव थियो । म प्रति उहाँहरुले देखेको सपना मेरो यो सानो प्रयासले पूरा गर्नेछ भन्ने आसा गर्दछु ।

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ABSTRACT

Psychological well-being (PWB) and coping strategies for surgical stress in patients after major surgery are the less explored areas in countries with low and moderate incomes. The aim of this research is to find out the status of PWB and coping of the patients after open heart surgery (OHS).

This Mixed methods study was carried out at Manmohan Cardiothoracic Vascular and Transplant Center, Maharajgunj including patients who underwent OHS from June 2022 to July 2023 and their caretakers. Four hundreds and twenty four patients were recruited by using the Cochran formula ($n= z^2pq/d^2$) with a 5% error and a confidence interval of 95% for the QUAN part of the study. Six caretakers were included in the in-depth interview for the QUAL part. Caretakers were interviewed from day 4 to day 10 after OHS. Ryff PWB scale and coping with OHS stress scale were used to collect data for the QUAN portion. The Institutional Review Committee (IRC) of the Institute of Medicine provided ethical approval, and administrative approval from the hospital before the data collection. Informed consent and assent (for those under 18) were taken both from the patients and caretakers.

The study result found the patient's average age in years of 48.8 (±16.93) ranging from 13 to 88 years. Among them 232 (54.71%) were male, and 344 (81.13%) were married. 240 (56.61%) of patients were living in the municipality, 245 (58.02%) were physically inactive, 248 (58.49%) of patients had age-appropriate body physique, and 275 (64.86%) of caretakers were their spouses. Regarding their vital signs, 220 (51.89%) had normal vital signs without using medicine to increase blood pressure, and 300 (70.75%)

of patients experienced no incisional pain postoperatively at the time of data collection. Likewise, 185 (43.64%) had to pay from their pocket for their surgery and service charges.

The study showed that 301 (72.17%) of patients had high psychological well-being, out of this, 293 (69.11%) in personal growth, and 288 (67.93%) in autonomy had high PWB. Whereas, 266 (62.73%) of OHS patients had moderate coping skills, followed by 118 (27.83%) of them had effective coping skills and 40 (9.43%) had ineffective coping skills in five coping strategies such as reflecting, believing and supporting, reassurance, religious, and acceptance.

The PWB of OHS patients was significantly associated with sex, living location, incisional pain, and age-appropriate physique. Male patients (OR=2.199), patients living in the municipality (OR=1.751), patients with no incisional pain (OR=5.102), and age-appropriate physique (OR=1.729) had higher PWB than females, patients living in the rural municipality, those having incisional pain, and no age-appropriate physique respectively. However, sex, incisional pain, and respiratory rates were significant predictors of PWB.

Regarding coping with OHS stress, the marital status and vital signs of the patients were significantly associated with the coping. Effective coping skill was adopted by the patients who were married (OR=2.278), and those with normal vital signs without using medicine to increase blood pressure (2.331) were higher than in single patients, and those vital signs were normal with using medicine to increase blood pressure.

Regarding the QUAL aspect, the changing pattern of behaviors among the patients started from seeking information, experiencing stress, making decisions for OHS with peak levels of fear and anxiety, to gradually adapting to the stress levels. The common thought of the OHS patients was related to operation and its success rate, medication, incisional pain, fear of death, financial burden, and physical health issues. The relationships between the OHS patient and caretaker were that of openness and emotional intimacy. Reflection, belief and support, reassurance, religious, and acceptance were common strategies that patients used to cope the OHS stress.

The majority of OHS patients have high PWB, and moderate to effective coping skills to cope the OHS stress. They often go through successive stages starting from seeking information to making a big decision to undergo OHS. Various high-risk groups (females, rurality of origin, single status, incisional pain, use medicine to increase blood pressure, and less than ideal age-appropriate body physique) need attention regarding PWB and coping respectively.

Key Words: *Coping with surgical stress, health psychology, Nepal, open heart surgery, psychological well-being*

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ABBREVIATION AND ACRONYMS

ACTH: Adreno Cortico Tropic Hormone

ADH: Anti Diuretic Hormone

ANS: Autonomic Nervous System

APA: American Psychological Association

BMI: Body Mass Index

BP: Blood Pressure

CAP: Child Assist Program

CHD: Coronary Heart Disease

CwOHSS: Coping with Open Heart Surgery Stress

CVD: Cardiovascular Disease

HDU: High Dependency Unit

HD: Heart Disease

HI: Health Insurance

ICU: Intensive Care Unit

IOM: Institute of Medicine

IRC: Institutional Review Board

LMICs: Low and Middle Income Countries

MCVTC: Manmohan Cardiothoracic Vascular and Transplant Center

MSE: Mental Status Examination

MMSE: Mini Mental Status Examination

NCDs: Non-communicable Diseases

NHRC: National Health Research Council

OH: Open Heart

OHS: Open Heart Surgery

PNS: Parasympathatic Nervous System

PWB: Psychological Well-being

PWBS: Psychological Well-being Scale

QUAN: Quantitative study

QUAL: Qualitative study

RHDF: Rheumatic Heart Disease Fund

RR: Respiratory Rate

SCP: Senior Citizen Assist Program

SNS: Sympathatic Nervous System

SPO_2: Oxygen Saturation

SGNHC: Shahid Gangalal National Heart Centre

VHD: Valvular Heart Disease

WHO: World Health Organization

CHAPTER I

INTRODUCTION

1.1 Study Background

Psychological well-being (PWB) and coping strategies for stress related to open heart surgery (OHS) are major areas of concern. These aspects are less explored in low- and middle-income countries (LMICs). PWB is defined as the result of both feeling good and working efficiently (Ryff, 2018). However, negative emotions can be long-lasting and may interfere with an individual's daily activities (Huppert, 2009; Ryff, 2018). Similarly, coping with stressful situations is highly subjective, much like PWB. Various factors influence a person's PWB and coping mechanisms. Broadly categorized, there are two primary determining factors: the internal and external environments of an individual (Winefield et al., 2012; Hernandez et al., 2018) who is hospitalized for OHS. The internal environment pertains to a person’s biological and psychological aspects, including thought patterns, emotions, and psychomotor activities. In contrast, the external environment encompasses social and physical surroundings, such as the critical ward, surgical theater, general wards, including overall hospital environment (Huppert, 2009; Hernandez et al., 2018).

In the surgical intensive care unit (SICU), patients undergoing OHS rely heavily on healthcare providers to meet their medical needs (Pinto et al., 2016). However, they also require various forms of support to facilitate their recovery post-surgery. Patients often depend on advanced medical equipment and continuous physiological monitoring to aid the healing of their compromised hearts. This equipment includes ventilators,

monitors, arterial lines, central venous lines, syringe pumps, infusion pumps, and medications to support cardiac function. Therefore, skilled healthcare professionals must effectively manage these area's resources under each patient's specific needs and clinical condition. Addressing patient's medical issues can significantly enhance their PWB (Rand et al., 2012; Pinto et al., 2016) as well as helping them to cope with the stress of surgery. Nonetheless, the quality of care in the SICU is influenced by numerous factors, including the attitudes of healthcare providers, the unit's protocols, the operating theater, and the overall ICU environment.

OHS is a significant surgical procedure that carries the risk of mortality both during and after the operation (Pinto et al., 2016; Aslani et al., 2017). This risk persists regardless of the healthcare team's expertise or experience, as well as the use of advanced equipment and medical supplies. OHS is defined as a cardiac procedure that is carried out on a heart that is not beating, requiring the use of a cardio-pulmonary bypass device. Throughout the surgery, the patient undergoes various physiological changes that can, at times, be life-threatening. The risks associated with OHS are substantial, as patients may face the possibility of death or serious complications (Rijal et al., 2020). [*Transition: morbid life→ (event: open heart surgery) → morbid life/death→ optimum quality of life/end of life]*.

All types of surgeries can be psychologically traumatic events (Pinto et al., 2016; Hernandez et al., 2018). However, psychological responses to these events vary from person to person, influenced by the individual's biopsychosocial environment. Caregivers and loved ones of patients experiencing a crisis must learn to recognize the common reactions to traumatic events. These reactions can manifest as changes in behavior,

physical and PWB, thought processes, spiritual beliefs, and social interactions (Roberts, 2015). The psychological response is understood as a mental reaction (how patients cope with and adjust to their injuries and treatments) in response to traumatic stressors. Generally, it encompasses the mental strategies a patient employs to maintain a positive mindset during illness, which reflects their coping mechanisms. Common psychological responses include anger, frustration, fear, anxiety, stress, denial, and isolation. These responses may manifest as mental projections that affect behavior, mood, and psychomotor activities (Basnet, 2022) in individuals facing significant stressors, such as undergoing OHS.

A person who is considered healthy encompasses more than just physical well-being. Health should be understood as a holistic state that includes physical, mental, spiritual, and socio-economic dimensions. According to Balog (1981), there are three major perspectives on health: the traditional medical concept, the World Health Organization's definition, and the ecological concept. The traditional concept, also known as the biomedical approach, defines health as a disease-free state. In contrast, the World Health Organization advocates for a holistic view of health. The ecological concept posits that health is significantly determine by a personal's level of functioning, their capacity to adapt to their environment, which is also referred to as a bio-psychosocial approach. These three perspectives cannot overlook the health status of critically ill patients in the SICU. Numerous variables, such as age, socioeconomic level, educational background, religious orientation, lifestyle, availability of emotional support, and present physical condition, have been found to be associated with health conceptions.

Mental health is described by the World Health Organization (WHO) in 2022 as a condition of well-being where each person reaches their full capacity, is able to manage everyday stressors, works effectively and efficiently, and contributes to their society. Mental health and well-being are integral components of overall health and one of every person's fundamental rights. Mental health is a shared concern and obligation since it is vital to the best possible performance of person, families, neighborhoods,societies, and nations (Selvam, 2018). A person’s mental and emotional health is shaped by both internal and external factors. According to Selvam, characteristics of a mentally healthy person include having positive feelings about oneself, being comfortable in social situations, and having the capacity to fulfill life's obligations.

In the present study, we considered several sociodemographic variables (age, sex, education, living location, marital status, religion, daily physical activity, family type, payment methods, and reason to do OHS), hemodynamic variables (vital indicators, including temperature, oxygen saturation, breathing rate, heart rate, blood pressure, and incisional pain), and behavior related variables (facial expression, body posture, mannerisms, eye contact, attire, social behavior, grooming, physical features, and interpersonal rapport. These variables were classified as independent variables, while psychological well-being and coping with OHS-related stress were identified as the dependent variables for OHS patients.

Regarding sociodemographic variables, the study categorized participants into teenagers, young adults, middle-aged adults, older adults, and senior adults are the five age categories. Adolescents were defined as individuals (aged between 12 to 20), young

adults (aged between 21 to 39), middle-aged people (aged between 40 to 59), older adults (aged between 60 and 79), and elderly adults as individuals (aged 80 and above). These categories were established for this study, referencing frameworks from Erikson, the WHO, and the age classification system used by the Government of Nepal. The sex variable included male and female participants. Marital status encompassed categories of married individuals and those who are single (including unmarried, widowed, and divorced). The study identified participants' religious affiliations as Hinduism, Buddhism, Islam, and Christianity.

OHS residing in urban areas (including metropolitan cities, sub-metropolitan cities, and municipalities) as well as those in rural municipalities were categorized based on their living locations. Educational attainment was classified into three groups: illiterate, able to read and write, and those with formal education (including primary, secondary, bachelor's, master's, and Ph.D. levels). Daily physical activity was divided into two categories: physically inactive (OHS patients who did not engage in physical activity or exercise for at least 30 minutes a day) and physically active (individuals who engaged in daily activity for 30 minutes, 30 minutes to an hour, 1 to two hours, or more than two hours). Family types were classified as nuclear, joint, or three-generation families. Payment methods for OHS services were categorized as out-of-pocket payments and third-party payments (including government schemes and various payment plans). The reasons for OHS included CAD, congenital heart disease, valvular heart disease, and a group of cardiac disorders.

Regarding hemodynamic variables (see operational definition), the observed general appearance and behaviors were derived from the components of the mental status examination for the observation of patients with OHS. The main aim of this research is to assess the PWB and coping mechanisms of patients dealing with OHS-related stress, as well as to explore the perspectives of their caregivers.

1.2 Statement of the Problem

Based on data from WHO, cardiovascular disease (CVD) is the primary cause of death globally. (WHO, 2018). OHS is one of the treatment modalities for CVDs (Praet et al., 2018; Senst et al., 2021). Following OHS, many patients experience various complications, including pain at the surgical site, cognitive dysfunction, and dependence on mechanical ventilation (Polunina et al., 2014; Daiello et al., 2019).

A prior research of Veluz and Leary estimated that by 2016, approximately one million patients underwent cardiac surgery globally each year (Veluz & Leary, 2017). However, it is estimated that in LMICs, 6.4 billion person do not have access to heart surgery. (Zilla et al., 2018). Although we do not have actual recorded data, it can be anticipated that Nepal also needs to expand access to cardiac surgery to ensure it is available to every citizen. To date, OHS has been provided by specialized hospitals, including the Sahid Gangalal National Heart Center (SGNHC) and the MCVTC. Additionally, other hospitals in both Kathmandu and surrounding areas are rapidly emerging to offer this vital service.

Psychological preparation is crucial for patients to effectively cope with OHS and to ensure a favorable prognosis. However, the psychological well-being of patients often

receives insufficient attention from healthcare providers (Salzmann et al., 2020). A previous study indicated that psychological adjustment tends to decline following cardiac surgery, leading to significant psychological issues such as anxiety, depression, stress, low self-esteem, passive dependency, somatic preoccupation, paranoid tendencies, social withdrawal, and impaired sexual and marital relationships (Heller et al., 1974; Salzmann et al., 2020; Sigdel et al., 2020; Rijal et al., 2020; Mohamed et al., 2022). The prevalence of depression and elevated anxiety levels has been reported to range from 20% to 45%, and 20% to 55% respectively following OHS (Cserép et al., 2013; Sigdel et al., 2020).

Regarding PWB and cardiovascular health, biological, behavioral, and psychological pathways appear to be interconnected in their functioning and maintenance. However, psychological well-being can be enhanced through individual-focused interventions, such as mindfulness-based programs (Kubzansky et al., 2018).

The evidence concerning the psychological well-being and coping mechanisms of patients following OHS and their associated stress level is limited in the context of Nepal. Only a few studies have examined the stress, coping strategies, and anxiety experienced by OHS patients in Nepal (Sigdel et al., 2020; Rijal et al., 2020). In a research work of Rijal et al. (2020), the psychological aspect of transfer anxiety in the postoperative period was investigated, while Sigdel et al. (2020) focused on preoperative anxiety among cardiac patients. Other dimensions of PWB and coping have still being a explored field in Nepal. The researcher conducted the current study in response to this gap in the literature.

1.3 Significance of the Study

A person with OHS experiences a range of physiological, psychological, social, spiritual, and economic challenges. In this study, the researcher main objective was to assess the PWB and coping mechanisms an individual following OHS. This research generate the body of knowledge in the area of PWB and coping strategies of OHS patients who were admitted to a university hospital.

A result of this research could be important to the healthcare personnals (including nurses, doctors, paramedics, clinical psychologists, etc.), researchers, individuals involved in the welfare of patients with OHS, family members, caregivers, and hospital administrators. Healthcare professionals would benefit from understanding the psychological well-being and coping strategies of patients following OHS. This study may also assist researchers in formulating new research questions for further investigation in this field. Additionally, professionals can utilize these findings for both academic and clinical purposes to enhance the quality of care provided. Hospital administration can leverage the study results to improve services for patients with OHS. Furthermore, these findings may be useful for policymakers and stakeholders in developing and implementing appropriate strategies.

1.4 Research Questions

1. What is the PWB and coping status of patients following OHS?
2. How are socio-demographic variables, PWB, and coping strategies associated?
3. How do coping mechanisms, PWB, and OHS patients' physical and mental health relate to each other?

4. How are PWB and coping strategies related to their respective domains?
5. What are the predictors of PWB in patients with OHS?
6. Why do psychological changes and coping mechanisms develop among patients after OHS from the caretaker's perspective?

1.5 Objectives

1.5.1 General Objective

This study's main objective was to find out the PWB and coping of patients who underwent OHS and were admitted in the MCVTC, Kathmandu, Nepal.

1.5.2 Specific Objectives

1. To evaluate the state of PWB and coping mechanisms of patients following OHS.
2. To examine the relationship between PWB, coping strategies, and socio-demographic variables.
3. To evaluate the connection between PWB, coping startegies and the physical and behavioral health of OHS patients
4. To evaluate the connection between coping and PWB
5. To identify the predictors of PWB among patients with OHS.
6. To explore the experiences of caretakers of patients with OHS.

1.6 Operational Definitions

Psychological Well-being: It encompasses an individual's expression of positive mental states, which consist of autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance. This construct is assessed using Ryff's 42-item PWB Scale.

Autonomy: It refers to the capacity of patients to make informed, uncoerced decisions, as measured by seven items on Ryff's PWB Scale.

Environmental Mastery: It refers to the extent to which patients feel capable of meeting the demands of their circumstances, as measured by seven items from Ryff's PWB Scale.

Personal Growth: It refers to activities that enhance self-awareness and identity, build personal capital, and improvement of the patient's quality of life after non-communicable diseases (NCDs). This growth is measured using seven items from Ryff's PWB Scale.

Positive Relations: It refers to the connections that patients have with significant individuals in their lives, fostering feelings of connection, respect, and love. This aspect of well-being is measured using seven items from Ryff's PWB Scale.

Life Purpose: It refers to the central motivating aims of an individual's life, which are assessed using seven items from Ryff's PWB Scale.

Self-acceptance: It refers to knowing and being conscious of one's own advantages and disadvantages, as measured by seven items from Ryff's PWB Scale.

Coping: It is regarded as a patient's strategy for adapting to the significant stress associated with major surgery following OHS. It was assessed using a 20-item questionnaire developed through a comprehensive review of the literature. This scale encompasses five domains: reflection, belief and support, acceptance, reassurance, and reliance on religion. Each domain contains a minimum of one and a maximum of six questions, utilizing a four-point rating scale.

Reflection: It encompasses unfavorable anticipations concerning the trajectory of OHS and thoughts related to the OHS, its outcome, helth serviceand their environment. This concept is evaluated using four items from the CwOHSS Scale.

Belief and Support: It is pertaining to an aspect of trust, hope, and optimism regarding the outcomes of OHS as a coping strategy, which is assessed using six items on the CwOHSS Scale.

Religious: It involves faith in God and the practice of prayer as a coping mechanism for OHS, which is assessed through a single item on the CwOHSS Scale.

Reassurance: It includes threat reduction, attentional diversion, and positive reappraisal as coping strategies, which are evaluated using four items from the CwOHSS Scale.

Acceptance: It refers to the acquisition of pertinent knowledge regarding OHS from a credible source and the recognition of the situation as a coping strategy. This concept is assessed using five items on the COS Scale.

Open Heart Surgery: OHS refers to the procedure in which a cardiac surgeon performs a sternotomy, cannulates the patient, and temporarily halts the heart's function.

This is followed by the use of a cardiopulmonary bypass machine, which maintains circulation and oxygenation during the surgery and assists in reviving the heart after the operation for the management of CVDs.

Redo Open Heart Surgery (Redo OHS): It refers to patients who have undergone at least one or more previous OHS.

Hemodynamics: It refers to the interaction of various components of the heart and blood vessels that work together to maintain adequate perfusion to the body's organs. According to Secomb (2016), it encompasses fundamental measures of cardiovascular function, including arterial pressure and cardiac output. In this study, hemodynamics specifically pertains to parameters that assess cardiovascular function, such as body temperature, breathing rate, blood pressure, heart rate, and oxygen saturation.

Blood Pressure: The force that circulating blood applies to blood vessel walls is known as blood pressure. Since it is directly related to the heartbeat's intensity and rate, it is frequently measured for diagnostic purposes. Key terms related to blood pressure include normotension, hypertension, and hypotension.

Normotension: Make reference to the state where arterial blood pressure is within the normal range, specifically 120/80 mmHg.

Hypertension: Describe a state where the arterial blood pressure is 10–20 mmHg higher than the normal value, specifically defined as ≥140/90 mmHg.

Hypotension: Describe a condition where the arterial blood pressure is 10–20 mmHg lower than the normal value, specifically defined as ≤ 90/60 mmHg.

Temperature: In this study, temperature refers to the body temperature of the patient. Body temperature is typically classified as normothermia, hyperthermia, or hypothermia.

Normothermia: Refer to the condition of maintaining a normal body temperature, which is typically measured from the patient's axilla. The normothermic range is defined as a body temperature of 37.0°C (98.6°F) or a range of 36.0°C to 37.5°C

Hyperthermia: Refer to a condition characterized by an elevated body temperature, specifically measured from the patient's axilla. When a person's body temperature reaches 37.5°C (99.5°F) or more, it is considered hyperthermia.

Hypothermia: Refer to a condition characterized by a low body temperature, specifically measured from the patient's axilla. A body temperature of lower than 36.0°C or 96.8°F is considered hypothermia.

Pulse Rate: In this study, it refers to the heart rate measurement, more precisely the heart's pace in beats per minute. In reaction to the blood flow, the arteries dilate and constrict as the heart pumps blood through them. For healthy adults, a normal pulse rate is between 60 and 100 beats per minute. The terms bradycardia and tachycardia refer to deviations from this typical range.

Bradycardia: Refer to a condition in which the heart beats fewer than 60 times per minute.

Tachycardia: Refer to a condition where the rate is higher than 100 beats per minute.

Respiratory Rate: It refers to the frequency of breathing, measured as the number of breaths taken per minute. The normal adult respiratory rate for adults ranges from 16 to 20 breaths per minute. Deviations from this normal range are termed bradypnea, which indicates an abnormally slow respiratory rate, and tachypnea, which indicates an abnormally fast respiratory rate.

Bradypnea: Refer to a slow respiratory rate, specifically defined as fewer than 12 breaths per minute.

Tachypnea: Refer to a rapid respiratory rate, specifically greater than 20 breaths per minute.

Oxygen Saturation (SpO2): It refers to the measurement of the percentage of hemoglobin that is currently bound to oxygen compared to the amount of unbound hemoglobin. Generally, oxygen saturation is considered normal for healthy adults when it is recorded at 95% or above. However, for this study, a saturation level of 90% or above was deemed acceptable. The term used to describe oxygen saturation levels that deviate from the normal range is hypoxia or hypoxemia.

Hypoxia: Refer to a state of insufficiently available of oxygen level at human body to maintain adequate homeostasis, specifically when oxygen saturation falls below 89%.

Hypoxemia: Refer to a condition in which the oxygen levels in the blood are lower than normal.

Inotropes: These are medications that alter the strength of the heart's contractions. Inotropes come in two varieties: positive and negative. Inotropes that are

positive enhance the force of the heartbeat, while negative inotropes diminish it. Commonly used inotropic agents include epinephrine, norepinephrine, phenylephrine, and vasopressin. These medications are typically employed to help maintain normal blood pressure in patients.

Family: A family is a group of individuals living together through the bonds of marriage, blood, or adoption within a single household, interacting with one another in their respective social roles, such as spouses, parents, children, and siblings. For the purposes of this study, there are three types of families: nuclear (or single), joint (or extended), and three-generation families (Park, 2017).

Nuclear Family: Refer to a group of individuals living together based on partnerships and parenthood, typically consisting of two adults and their socially recognized unmarried children.

Joint/Extended Family: Refer to a group of individuals living together, bound by partnerships and parenthood, typically consisting of a pair of adults and their socially recognized married children.

Three Generation Family: Refer to three or more generations living together under the same roof, sharing a kitchen and economic expenses. This type of family consists of three or more nuclear families cohabiting.

Caretaker: According to the Britannica Dictionary, a caretaker is an individual who provides physical or emotional support to another person. In this study, the caretaker refers to someone who is directly responsible for the care of a patient before, during, and

after an operation. While a medical professional can serve as a caretaker, they are not considered part of the medical care team.

Patient: In this study, a patient is defined as an individual diagnosed with CVD who was admitted for OHS at the MCVTC, Maharajgunj.

Selected Variables: This refers to the individual's sociodemographic characteristics (marital status, age, family background, sex, religion, and residential area) and professional characteristics (education, occupation, and financial status).

Rural Municipality: According to the classification criteria established by the Government of Nepal, a rural municipality is defined as an administrative division characterized by a sparsely populated municipality, in accordance with the three-tier system of urbanization.

Municipality: According to the classification criteria established by the Government of Nepal, a municipality is defined as an administrative division characterized by a dense population, reflecting a three-tiered system of urbanization. Municipalities are categorized into three distinct types: metropolitan municipalities (with a population of 500,000 or more), sub-metropolitan municipalities (with a population of 200,000 or more), and municipalities (with a population of 10,000 or more).

Extroversion: According to Carl Jung, an extrovert is an individual who derives energy from the external world and social interactions. Those with extroverted personalities are typically very talkative, sociable, active, and warm.

Introversion: According to Carl Jung, an introvert is a person whose introverted nature defines their personality. This usually quiet or reticent individual likes to spend time alone themselves and is often reflective.

Tertiary Care Hospital: Its refer to the type of hospital, where the medical professionals (physicians, nurses, pharmacists, perfusionists, medical scientists, etc.) provide highly specialized medical care, which includes sophisticated and difficult procedures and treatments.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

In this chapter, the literature pertaining to PWB and coping with surgical stress. It also presents a conceptual framework. The search was restricted to studies published in English and Nepali, as well as articles from journals and textbooks. The databases reviewed included online search engines such as HINARI, PubMed, Google Scholar, Academia, ResearchGate, Scopus, and Summon, along with a manual search in libraries for gray literature.

The keywords utilized to search the relevant literature include heart surgery, 42-item psychological well-being scale, and well-being after open heart surgery. Keywords encompassed well-being among “surgery patients”, “coping with surgical stress”, coping with major surgery, PWB and coping, patients during hospitalization, philosophy of PWB and coping, and theories of PWB and coping, services and coping, coping due to illness, coping mechanisms, coping style, coping strategies, and relationships of patients and healthcare providers were also employed in the literature search.

The literature review encompassed a wide array of interconnected subjects. It methodically reviewed, summarized, and synthesized literature about key areas including patients with OHS, PWB, coping with OHS-related stress, coping mechanisms, stress within hospital settings, and the causes of stress experienced in hospitals. Additionally, it addressed factors influencing patient’s responses to stress, the effects of stress, the Coping with Surgical Stress Scale, psychological aspects of coping with OHS stress, and

the conceptual framework. Following the review, the section marked "literature review" provided an overview of the results from the examined literature.

An increasing amount of literature is linking the experiences of PWB and coping among patients following OHS. However, there isn't enough research specifically addressing the PWB and coping mechanisms of patients undergoing major surgery in Nepal. Similar to other health services, hospital services are entering a new era due to continuous advancements in science and technology (Marasini, 2020). For instance, endovascular intervention services for cardiovascular diseases are now being offered from a hybrid operating theater in Nepal (Annual Report of MCVTC, 2079). Nevertheless, there is no technological substitute for addressing patient's psychological states and coping strategies, as these experiences are inherently subjective.

2.2 Patients with Open Heart Surgery

OHS has been recognized as a treatment modality for chronic heart diseases (Praet et al., 2018; Senst et al., 2021). The results of heart surgery are correlated with a variety of important risk variables, such as age, gender, ejection fraction, myocardial infarction history, the number of prior OHS procedures, diabetes that requires medication, and dialysis reliance. Acute structural defects, renal failure, cardiogenic shock, gunshot wounds, unstable angina, and persistent congestive heart failure are among the comorbid disorders and consequences that are also very important (Hannan et al., 1990).

Numerous cardiac disorders, such as coronary artery disease and valvular heart disease(which encompasses inborn abnormalities), have been treated with OHS, and

cardiac transplantation where a damaged heart is replaced with a donated one (Phillips & Gotter, 2018; Senst et al., 2021). Typically, a patient undergoing OHS remains in the hospital for 5 to 7 days, which includes 2 to 3 days in the ICU. If complications arise, the hospital stay may be extended significantly (Sabzi & Faraji, 2015; Beckmann et al., 2015).

OHS is significantly associated with post-operative psychological disturbances in a substantial proportion of patients. Previous studies have indicated that patients with a family history of schizophrenia, lacking secure emotional relationships, facing overwhelming personal problems, or having a history of brain damage are predisposed to developing delirium following OHS (Ramesh et al., 2017; Younes et al., 2019). Delirium has been found to occur more frequently after OHS compared to other thoracic procedures (Beckmann et al., 2015; Younes et al., 2019).

Transient postoperative cognitive decline and postoperative delirium are relatively common complications following OHS, often attributed to advanced age and multiple comorbidities. Impaired overall cognitive function before surgery, along with a low level of education, increases the risks of cognitive decline and delirium. However, the specific cognitive profile that predisposes individuals to both conditions has not yet been fully elucidated (Gan et al., 2020). A study conducted in 2017 examined the relationship between postoperative delirium and cognitive decline one month after surgery, indicating that cognitive performance generally recovers within one year, and patients predisposed to postoperative delirium can be identified before surgery through poorer performance on attention tasks (Tafelmeier et al., 2019).

The challenges patients encounter following OHS which includes modifying and restoring the living-style, sexual, vocational and other functions are significant.

According to research, psychological variables may be more important in directing the post-OHS recovery process than medical aspects (Younes et al., 2019; Rijal et al., 2020). Patients group their views of sickness around five logical themes or elements, according a study by Petrie et al. (1996). These five themes are referred to as sickness perceptions by health psychologists. The following are the five main cognitive components:

i. ***Identity:*** The term used to characterize the ailment and the symptoms that the patient believes are associated with it.
ii. ***Cause:*** Individual beliefs regarding the illness's cause.
iii. ***Timeline:*** The patient's estimation of the illness's duration.
iv. ***Consequences:*** Anticipated impacts and results of the disease
v. ***Cure or control:*** How the patient overcomes or manages the disease.

Healthcare providers should facilitate the patient with OHS in these aspects of illness perception.

2.3 Psychological Well-being

According to Ryff (2014), PWB is the degree to which people believe they have significant influence over their lives and actions. Another way to describe PWB is the efficient operation of the psychological system. Positive functioning encompasses six domains of PWB: autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance. Professor Ryff introduced

the concept of PWB to address the absence of a component representing positive human functioning in the 1980s (Cooper, 2018).

As noted by Deci and Ryan (2008), A combination of positive emotional emotions, like happiness (the hedonic perspective) and good functioning in one's personal and social life (the eudaimonic perspective), is commonly thought of as psychological well-being. Huppert (2009), and Winefield et al. (2012) state living well is the goal of mental wellness, which can be expressed by a blend of contented emotions and efficient operation. People who are psychologically well describe feeling content with life, cheerful, capable, and supported. Additionally, Huppert proposed that improved physical health could result from wellbeing and be mediated by genetics, neurochemical effects, and patterns of brain activity (Winefield et al., 2012).

Subjective well-being and PWB are two distinct terms that are often used interchangeably. Subjective well-being encompasses both affective and cognitive components, representing a broad construct related to quality of life (Diener et al., 2013). The affective component deals with how frequently emotions are experienced; for example, those who have greater subjective well-being levels are more likely to feel happy emotions than negative ones. Overall life happiness is related to the cognitive component and reflecting an individual’s perspective across various domains including work, health, and relationships. Well-being denotes the subjective expression of an individualized experience.

Success in a variety of areas, such as relationships, employment, and health, is linked to happiness. However, the phenomena of hedonic adaptation means that objective life events do not always affect people's feelings of their well-being. According to a study

by Armenta et al. (2015), practicing gratitude, doing good deeds, participating in social work, and completing pleasant activities can all significantly enhance well-being.

Engaging in a variety of activities, happy people are more likely to seek out connections, show helpful behaviors, exhibit initiative at work, and deal with life-altering situations in a successful manner. As a result, happiness has a good impact on one's general health, career, and interpersonal connections. According to longitudinal panel studies, people who have experienced a great deal of adversity in their lives have an exceptional ability to adjust to stressful situations like unemployment, widowhood, and handicap (Clark & Georgellis, 2012).

Health and PWB are closely linked with older age. The theory of PWB posits that early experiences establish a foundation for PWB. However, daily experiences can also contribute to balance higher PWB. Compared to a poor social environment, a positive social environment is linked to improved health outcomes and higher levels of well-being (Cooper, 2018).

2.4 Coping with Open Heart Surgical Stress

2.4.1 Coping Mechanism

Coping is defined as the capacity to start and continue PWB in the face of a catastrophic circumstance (Folkman, 1997), and it is associated with improved psychological adjustment and results (Smith et al., 1997). According to Johnston and Johnston (1988), coping is the process by which people attempt to reduce stress and its effects on their health. This is problem-focused, aimed at lowering the risks of disease

and injury, and emotion-focused, focused on lowering the unpleasant emotional outcomes.

According to Singh and Shrestha (2017), coping is a technique people employ to deal with situations they view as unpleasant. Coping is a broad process with multiple coping pathways (Folkman & Lazarus, 1980). Coping strategies are distinct from coping processes. Without changing their process pathway, a person may dynamically transition between different coping mechanisms or mix different coping mechanisms (Folkman & Lazarus, 1985). Coping is multifaceted and categorically formed. Combining quantitative and qualitative study approaches is recommended for coping research due to the complex structure.

A coping mechanism is a psychological tactic or adjustment that an individual uses to successfully handle stress. In this sense, coping refers to effectively managing issues or challenges, and mechanism refers to a way. Thus, a coping mechanism is a method for handling the stress brought on by situations and activities of daily life. Likewise, a coping mechanism is any conscious or unconscious adaptation or modification that reduces stress and anxiety during a stressful event or circumstance, according to the American Psychological Association Dictionary of Psychology. A common goal of psychological therapies is to change unhelpful coping strategies.

People with coronary artery diseases, who live with the daily consequences over a long duration, may have to develop coping strategies with long-term outcomes and the unpredictability of recurrent fluctuations due to chronic disease (Dziedzic & Hammond, 2010). Coping behaviors that have been researched in chronic diseases are often divided into two categories: passive coping strategies (catastrophizing and wishful thinking) and

active coping strategies (information-seeking and self-management). Research on arthritis shows that persons who feel in control of their health issues and how they affect their day-to-day lives (Felton & Revenson, 1984) and who believe they can manage their pain and other symptoms (Keefe et al., 1997; Lefebvre et al., 1999) cope well. A person's assessment of the threat and various coping mechanisms are elements that impact their coping behavior. It seems that active coping behaviors are more effective than passive coping to help patients manage their situation.

Figure 2.1

Literature Based Flow Chart of Coping

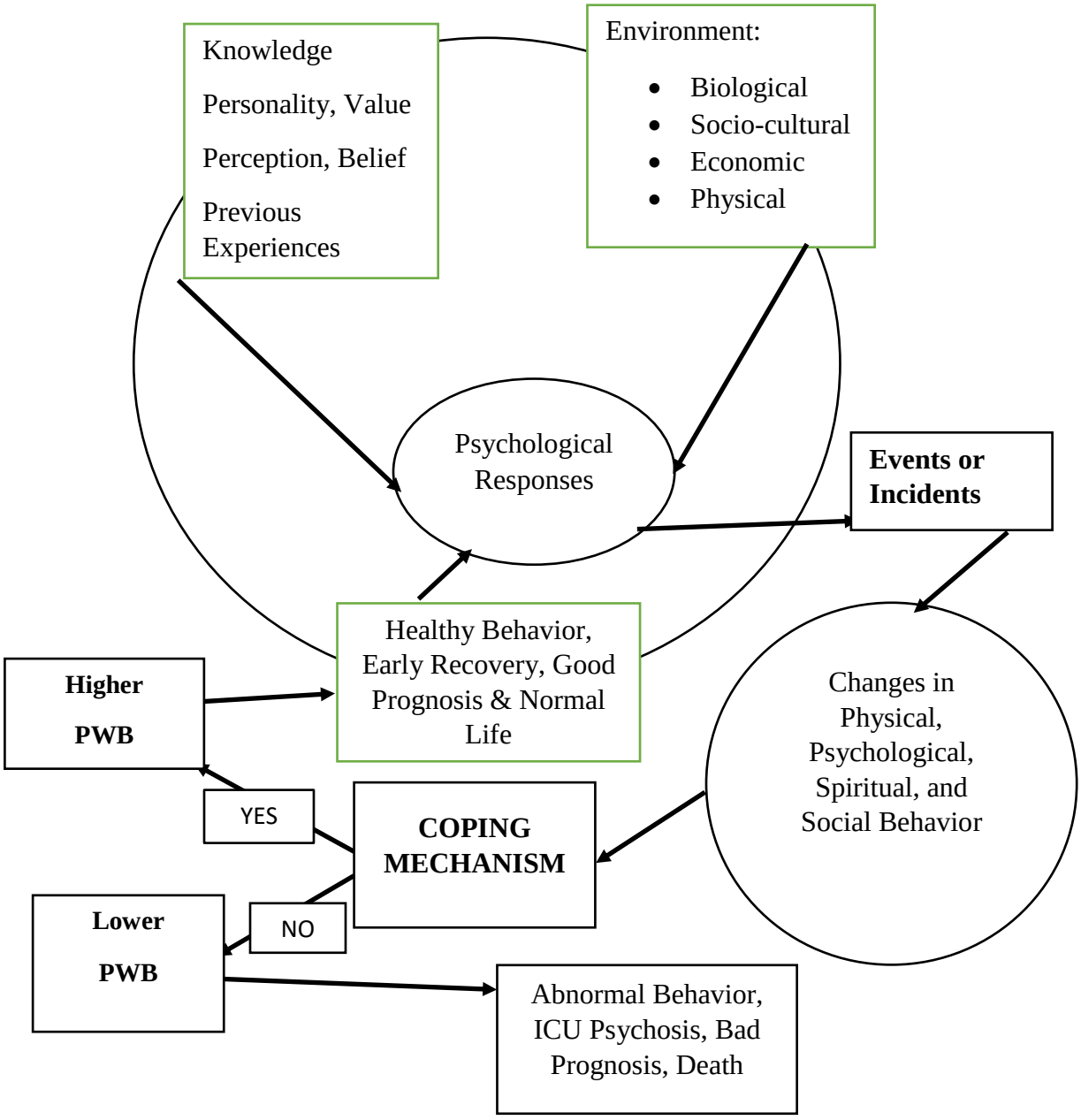


Figure 2.1: Schematic diagram of the factors, responses, and outcome of coping.
Source:- Literature Review

The conceptual model of this study has been presented as a schematic diagram in Figure 2.1. It explains about the patient underwent the stressful life situation (OHS) and

its outcomes. Various internal and external factors directly affect the person's psychological responses toward any incidents and stressful situations.

A person's internal factors such as knowledge, personality, perception, belief, values, and previous experiences, and external factors such as biological, sociocultural, economic, and physical environment guide the person’s psychological responses. If the incident occurred i.e. diagnosis of coronary artery disease and plan OHS they went through the various stages of change. Those changes might be in a person’s physical, psychological, spiritual, and social behavior, which leads to activating coping mechanisms.

If the person's coping mechanism functions properly, which leads to high PWB (good adaptive behavior), the outcome of the person with OHS will lead to normal behavior, early recovery, good prognosis, and normal life. However, if the coping mechanism does not function properly, it leads to low PWB (maladaptive behavior). The low PWB with OHS would manifest abnormal behavior, ICU psychosis, poor prognosis, and ultimately death.

2.5 Stresses in Hospital

Stress has a significant impact on a person's daily life. Stress means anything that poses a challenge or threat to human well-being (Singh & Shrestha, 2017). The level of stress has ranged from mild to severe. Mild stress induces creativity, learning, improvement, and achievement. However, severe stress undermines health and interrupts the state of equilibrium of the person and their life. Stress, according to Hans Selye (1936), is the body's general reaction to any demand for change. When someone feels

that demand surpasses their personal and social resources, they may experience stress or strain on a physical, mental, or emotional level (Singh & Shrestha, 2017).

According to psychology, stress is a form of psychological suffering and a sensation of emotional pressure and strain. It also plays a factor in motivation, adaptation, and reaction to the environment. According to the American Psychological Association (APA), stress is a response to an event that throws off a person's equilibrium both internally and externally.

Any incident or event in life that a person finds threatening or difficult to cope with is a potential cause of stress. The causes of stress are known as stressors and may be internal or external (Mohamed et al., 2022). External stressors include major life events such as the beginning of school, changing physique during adolescence, choosing a career, marriage, managing a home, having children, changes of aging, chronic health problems, retirement, and the death of a spouse (Singh & Shrestha, 2017; Mohamed et al., 2022). Another one might be daily activities such as traffic jams, lack of sleep, time pressure, fear of crime, shopping, loneliness, relatives, excess noise, difficult neighbors, office policies, and job dissatisfaction, etc. Similarly, the internal stressors might be internal beliefs, attitudes, interpretations, expectations, self-esteem, and perceptions in combination with the external events that tend to create stress. Other stressors might be occupational, psychological, family, social, environmental, and financial (Singh & Shrestha, 2017). Some causes of stress during hospitalization are identified through the literature reviewed, which are unfamiliarity with environment, loss of autonomy, being cut off from one's spouse and family, financial difficulties, social isolation, ignorance, the possibility of the disease's severity and/or prognosis, and pharmaceutical issues.

Stressors have a variety of effects such as physical, emotional, intellectual, and spiritual (Sedaghat et al., 2019). As stated by Singh and Shrestha (2017), a person's physiological equilibrium may be in danger due to physical stress. Negative emotions can result from emotional stress. A person's perceptual and problem-solving abilities can be influenced by intellectual stress. Likewise, a person's relationships can be altered by social stress. Spiritual stress can influence a person's values. The client will be under different kinds of stress like fear of death, fear of disfigurement, pain, illness, etc. The clients presented various kinds of responses such as physiological responses, systemic stress responses, and psychological responses (Hadlandsmyth et al., 2017).

As stated by Singh and Shrestha (2017), Hadlandsmyth et al. (2017), Sedaghat et al. (2019), and Mohamed et al. (2022) stress responses are physiological and psychological. The details of these stress responses are presented in Figure 2.2. As soon as our sense organ receives something new, our body decides whether it is stressful or not. A stressful situation enhances a set of physiological reactions. Our body has a compensating mechanism for preservation that automatically comes into action in times of change in the internal environment of our body. The nervous, endocrine, and immune systems are involved and present fight-and-flight responses (Sedaghat et al., 2019). The body prepares itself for survival and adjusts automatically to different systems differently to maintain equilibrium.

Systemic Stress Responses

***The nervous system*:** When stimulative stressor signals reach the brain, to activate the autonomic nervous system (ANS), the hypothalamus is triggered. The heart, lungs, stomach, glands, and even blood arteries are all under the direction of this ANS. The

sympathetic and parasympathetic automatic nervous systems are the two subgroups of the ANS. SNS is very active during stressful situations which increases secretion, heartbeat, respiratory rate, etc. whereas; the parasympathetic nervous system has an opposite response to the systematic nervous system (Singh & Shrestha, 2017). In addition to conserving energy, the parasympathetic nervous system protects our bodies by regulating gland secretions such mucus, saliva, tears, and stomach acid.

The endocrine system: The adrenal gland is essential to this system. The adrenal medulla begins to release both adrenaline and non-adrenaline in response to stimulation from the sympathetic nervous system. The fight-or-flight reaction is brought on by elevated levels of both adrenaline and non-adrenaline, and it is characterized by an increase in heart rate, bronchial airway dilatation, and metabolic rate. Adrenocorticotropic hormone (ACTH) is secreted by the anterior pituitary gland. According to Sedaghat et al. (2019), it causes the adrenal cortex to create more corticosteroids. The body is able to sustain consistent blood glucose levels thanks to cortisol. Reduced urine production, increased blood volume, and elevated blood pressure are the results of the posterior pituitary gland's secretion of anti-diuretic hormone (ADH) and increased water reabsorption (Singh & Shrestha, 2017).

***The immune system*:** Stressful situations alter the immune system as well. Secretion of corticosteroids and catecholamine aids in the suppression of immune function. Glucocorticoids present in high concentrations depress the immune system, reduce inflammatory responses, and decrease lymphoid tissues and antibody production resulting in susceptibility to infection (Singh & Shrestha, 2017; Sedaghat et al., 2019).

Psychological Responses

***Cognitive responses*:** According to Hadlandsmyth et al. (2017), Sedaghat et al. (2019), and Mohamed et al. (2022), cognitive responses include difficulty focusing, poor judgment, decreased accuracy when counting, forgetfulness, decreased problem-solving ability, decreased attention span, difficulty learning, preoccupied mind, daydreaming, etc.

E*motional responses*: Emotional reactions include feelings of inadequacy, low self-esteem, irritability, lack of motivation, lethargy, anger, anxiety, depression, and fear (Hadlandsmyth et al., 2017; Sedaghat et al., 2019; Mohamed et al., 2022).

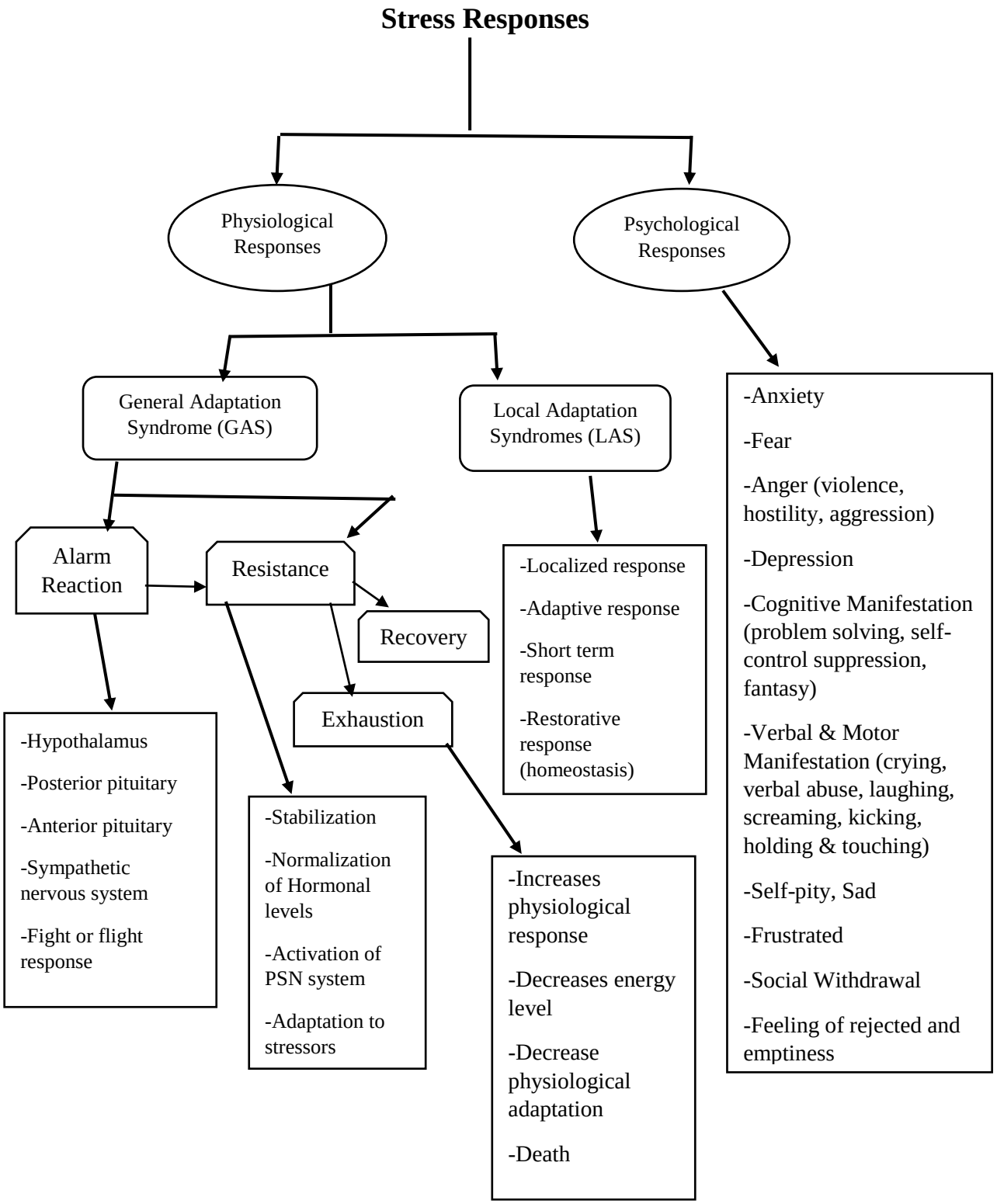
Behavioral responses: According to Hadlandsmyth et al. (2017), Sedaghat et al. (2019), and Mohamed et al. (2022), these reactions include excessive crying, emotional outbursts, dependence, poor performance, substance abuse, sleeplessness or excessive sleeping, hanging in eating habits, loss of appetite or overeating, decreased job performance quality, increased absenteeism at work, an increase in accidents, avoiding social relationships and sitting alone, and more.

Stress Response of an Individual

The stress response has been different individually. Various factors play an important role in the stressors such as internal and external to the person. Based on the literature the stress response of an individual has been presented on a flow chart in Figure 2.2 for a comprehensive understanding of the stress response in different stages.

Figure 2.2

Literature Based Stress Response



Source:- Literature Review

In addition to the immediate pre-operative phase, the patient has high levels of anxiety prior to hospitalization, throughout the period between hospitalization and surgery, and after surgery. On the morning of surgery, very few patients had their highest level of anxiety (Johnston, 1980). Similarly, stress hormones such as adrenocorticotropin, cortisol, vasopressin, and renin concentrations have significant roles during stressful situations. Bryant et al. (2015) concluded in their study that the long-term post-traumatic stress disorder effect was indicated by the existence of moderate traumatic brain injury, recent life stressors, being a woman, and being admitted to the intensive care unit.

2.6 Psychological Well-being and Coping with Open Heart Surgical Stress

PWB and coping are different aspects of psychology but are associated with each other. This portion included a research findings related to PWB and coping. According to Hadlandsmyth et al. (2017), a randomized controlled trial with a sample size of 346 people titled "Relationships among pain intensity, pain-related distress, and psychological distress in pre-surgical total knee arthroplasty patients: A secondary analysis," there were significant correlations between the intensity of pain and the associated distress and catastrophizing, anxiety, and depression. Additionally, they discovered that patients with higher anxiety levels reported more anguish than pain intensity.

Košir et al. (2020) used individual semi-structured interviews analyzed using an inductive thematic networks approach to conduct a qualitative study with 28 participants. The study revealed four adaptive coping styles: humor, proactive behavior, finding a purpose, and positive reframing and optimism. maladaptive coping mechanisms such

denial, avoidance, and passive acceptance. They came to the conclusion that an adult's coping mechanisms and physical functioning can influence their psychological well-being. Both a person's psychological and physical health have an impact on their quality of life. Patients with physical limits, psychological anguish, and maladaptive coping mechanisms should all have their well-being closely examined..

An observational study on social support and psychological discomfort, 17.7% of 441 patients with lung cancer who were treated at seven hospitals in Chongqing, China, between September 2018 and August 2019 experienced psychological distress. Similarly, there was a statistically significant negative correlation between social support and psychological distress, which was largely mediated by perceived stress and confrontation coping. They came to the conclusion that social support seems to help reduce psychological discomfort by improving perceived stress and confrontation coping with cancer (Tian et al., 2021). According to the findings of another study by Jabłoński et al. (2019), which involved 78 women who had undergone breast surgery for cancer, women who were more likely to experience issues with intimacy and body acceptance were less likely to have a healthy attitude toward food and intimate relationships with their partners. Women's higher expression of femininity can be viewed as a positive manifestation of a socioculturally conditioned coping strategy.

2.7 Theoretical Foundation of this Study

Theories are explanations of natural or social behaviors, events, or phenomena. Formally speaking, a scientific theory is a set of ideas and concepts, as well as the connections between them (propositions), that, when taken as a whole, offer a logical,

methodical, and cohesive explanation of a phenomenon of interest, subject to specific presumptions and exclusions (Bacharach, 1989). Scientific theories differ from theological, philosophical, or other types of explanations in that they can be empirically tested using scientific methods.

The theories relevant to this study pertain to well-being, illness, health, disease, wellness, stress, and coping. Hedonism, want theories, and objective list theories are the three main philosophies of well-being. The term from the ancient Greek word for Psychological or motivational hedonism posits that only pleasure or pain motivates human behavior. Jeremy Bentham first articulated psychological hedonism in his 1789 work, Introduction to the Principles of Morals and Legislation. Bentham argued that nature has placed humanity under the dominion of two sovereign masters: pain and pleasure. According to hedonism, only pleasure holds value, while pain or displeasure is considered to have disvalue, or the opposite of worth (Bentham, 1789). Subsequently, Bentham's followers elaborated that hedonism is understood as well-being, which encompasses a balance of positive and negative conscious experiences. In simpler terms, this means that pleasure, defined as the satisfaction of desires, is regarded as the highest and ultimate goal of human life.

Regarding desire theories, theorists address this issue by grounding well-being in the desires of each individual. These theories contend that the fulfillment of preferences or desires (without their frustration) is what constitutes well-being (Chappell & Meissner, 2023). In a similar vein, objective list theories suggest that well-being is influenced by a number of objectively useful factors (Rice, 2013). These lists usually include not only happiness but also positive relationships, accomplishments, enjoyment of art, creativity,

and knowledge (Fletcher, 2013). The items on these lists are important because they are considered basic or intrinsic goods, meaning they are valuable in and of themselves, not just for the potential benefits they may offer.

In the meantime, the psychological stress model created by Lazarus and Folkman (1987) and Selye's theory of systemic stress, which is based on physiology and psychobiology, reflect different approaches to the subject of stress study. Trait-oriented versus state-oriented and microanalytic versus macroanalytic approaches are two distinct criteria that can be used to categorize coping theories. The macroanalytic, trait-oriented approach served as the foundation for the various theoretical frameworks used in this investigation (Folkman, 1997).

Approaches to systemic stress based on physiology and psychobiology (Selye, 1976) and approaches to psychological stress developed within the field of cognitive psychology are two separate groups of theories that look at the precise relationship between external demands or stressors and bodily processes.

Religious, biomedical, psychosomatic, humanistic, existential, and transpersonal are the six models that are associated with health and illness. All of the other models are holistic, except for the biological model, which is categorically reductionist. The biological, psychosomatic, and existential models are categorized as disease and illness models, whereas the religious, humanistic, and transpersonal models are categorized as health models.

The other two health and wellness-related models were developed by Halbert L. Dunn (High-level wellness model) and John Travis (Illness-wellness continuum). Wellness is the complete opposite of illness; however, the western world tends to categorize health into three distinct areas: the physical aspect, which is treated by medical doctors; the psychological aspect, addressed by psychiatrists; and the spiritual aspect, guided by religious leaders. Dunn also emphasized the significant influence of the environment on health, illness, and wellness. Equally important is the individual, who should strive for personal mastery in all facets of life. Dunn's concept of wellness focuses on utilizing the options available in the present moment.

Travis's theoretical models elucidate the connections between human health, medical care, and wellness. The primary objective of the illness-wellness continuum is to emphasize that the mere absence of illness does not equate to wellness, nor does it guarantee a high quality of life; rather, it represents a neutral point on the continuum. The treatment paradigm of modern medicine can help patients reach this neutral point. In contrast, the wellness paradigm encompasses both ends of the continuum. The concept of wellness seeks to empower individuals to attain higher levels of well-being and improved quality of life, regardless of their current physical health status. Therefore, according to Travis, even individuals with physical ailments can experience a good quality of life. This study synthesizes theoretical concepts from various models, as no single theory could adequately convey the themes explored. The concepts derived from these theories and models guided the researcher in developing a framework of conceptual.

2.8 Conceptual Framework

It is a structured representation of what has been learned, designed to effectively explain the natural progression of the phenomenon under study. It facilitates the specification and definition of concepts related to the problem (Luse et al., 2012). Additionally, it serves as an analytical tool that aids in achieving a comprehensive understanding of the phenomena being investigated. In research, a conceptual framework is developed to illustrate how ideas are organized to fulfill the study's objectives. This framework delineates key concepts, their interrelationships, and how they are arranged to systematically achieve the research goal. It functions similarly to a signpost. The conceptual framework is presented below.

Figure 2.3

Conceptual Framework

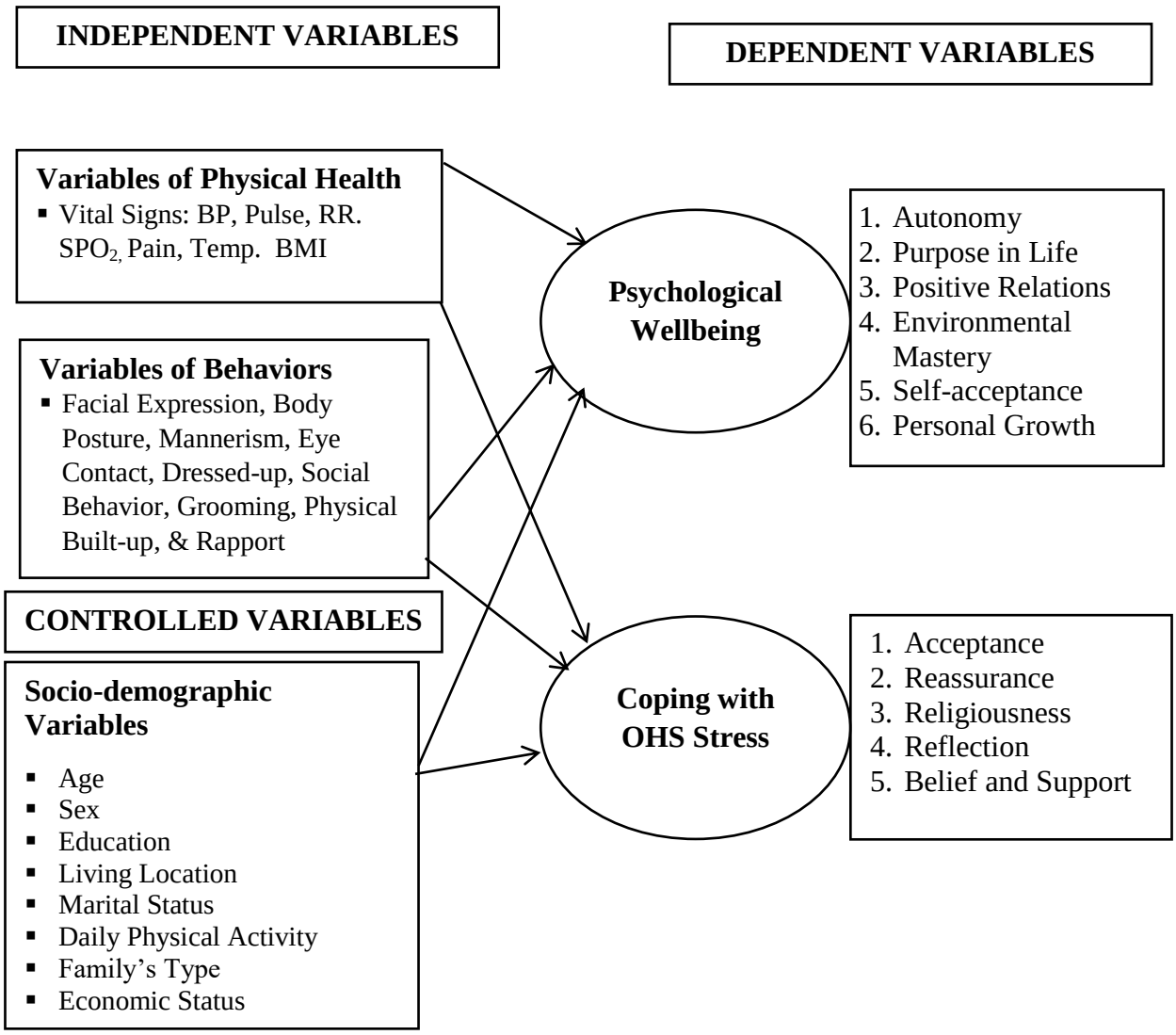


Figure 2.3: Illustration of the conceptual framework in relationship with different variables
Source:- Field Study 2022/23

Figure 2.3 presents the inter-relationship between dependent, independent, and controlled variables. PWB and coping with surgical stress are the outcome or dependent variables of this study. OHS is a transitional incident for the study. Likewise, socio-demographic variables are controlled variables that control the effect of independent variables on the dependent variables. Independent variables are physical health (vital

signs: blood pressure, pulse, respiratory rate, oxygen saturation, pain, temperature, and body mass index), and behavioral variables. The figure further mentioned the relationship between PWB and coping with OHS stress of patients.

In a diagrammatic presentation of the conceptual model, the variables that might affect the PWB and coping of the patients might be the variables of physical health and behavior of the patient. Stress response in an individual body in physical form manifested the changes in vital signs such as blood pressure, temperature, and respiratory rate, pulse rate due to activation of the autonomous nervous system (sympathetic and parasympathetic responses). Similarly, a patient's behavior might be changed due to changes in the internal environment of the body, which might be facial expression, body posture, mannerisms, eye contact, dressed-up, social behavior, grooming, physical features, rapport, etc. Regarding OHS variables, patients who went through similar events previously had better PWB and coping than patients who experienced the event for the first time. Redo operation of OHS might be another factor, that affects the patient's PWB and coping with surgical stress.

A prior study conducted in Indonesia, India, and Portugal shows a significant association between sex, living location, and PWB. However, there is no connection with age, marital status, educational level, and daily physical activities (Cachioni et al., 2017; Chamuah & Sankar, 2017; Akila et al., 2019; Zulfitri et al., 2019). In reference of those study, socio-demographic variables were taken as controlled variables in this study.

2.8 Summary of the Reviewed Literature

Reviewed literature indicated that patients after OHS have low PWB immediately after OHS. They used various coping strategies to overcome major surgical stress. The literature is searched based on dependent and independent variables.

Patient with OHS tends to go through various life difficulties because the surgery itself is a traumatic condition that alters psychological health and stress. There are various risk factors associated with OHS that lead to vulnerability to a patient's PWB and coping mechanism. While staying in the hospital during OHS, patient has to face numerous physical, psychological, physiological, and spiritual stressors. Those stressors and a person's psychological willingness could affect the outcomes of OHS.

Prior literature has shown that the management of patients undergoing OHS should be multi-dimensional holistic in approaches such as early extubation, pain management, dietary supplements, surgical site infection prevention, physiotherapy, medication, psychological and emotional support, patient and health care provider relationship, physical setting of the hospital.

Long-term physical, social, and economic effects of coronary artery disease may cause people to deal with uncertainty about their long-term prognosis and the unpredictable nature of repeated swings in disease activity. Coping behaviors in chronic illness have been thoroughly examined and are often divided into two categories: passive coping techniques, such wishful thinking and catastrophizing, and active coping methods, like information-seeking and self-management.

A person's internal factors such as knowledge, personality, perception, belief, values, and previous experiences, and external factors such as biological, sociocultural, economic, and physical environment guide the person's psychological responses. If the incident occurred i.e. diagnosis of coronary artery disease and plan OHS then they went through the various stages of change. Those changes might be in behavior, physical well-being, psychological health, spiritual beliefs, and social interaction, which lead to activating coping mechanisms.

Stress has a significant impact on a person's daily life. Stress means anything that poses a challenge or threat to human well-being. The level of stress has ranged from mild to severe. Mild stress induces creativity, learning, improvement, and achievement. However, severe stress undermines health and interrupts the state of equilibrium of the person and their life.

Unfamiliarity with the surroundings, loss of independence, separation from the spouse and family, financial difficulties, social isolation, lack of information, the threat of severity and prognosis, and pharmaceutical issues are the main causes of stress during hospitalization. Stressors can have a range of affects, including mental, spiritual, emotional, and physical. The patient has high levels of anxiety prior to hospitalization, during the time between hospitalization and operation, and after surgery, according to the empirical study. These symptoms are not limited to the immediate pre-operative period. On the morning of surgery, only few patients had their highest level of worry. Similarly, stress hormones such as adrenocorticotropin, cortisol, vasopressin, and renin concentrations have significant roles during stressful situations. The existence of moderate traumatic brain injury, recent life stressors, female gender, and critical care unit

hospitalization all had a lower predictive value for the long-term effects of post-traumatic stress disorder. There are some studies regarding PWB and coping among OHS patients globally, however, there is a dearth of data regarding these subjects regionally and nationally.

CHAPTER III

RESEARCH METHODOLOGY

The requirements of the research approach for this study are covered in this chapter. A primary purpose is to find the status of PWB and coping with OHS stress of the patients admitted to the hospital for their treatment. The research methodology consists of philosophical aspects of research, ontology and epistemological consideration, nature of the study, research design, source of information, research setting, sample size, sampling technique, instrumentation, tool validation and reliability, approach to data collecting, ethical considerations, and data analysis methodology to identify the PWB and coping with surgical stress of the patients after the OHS.

3.1 Philosophical Aspect of Research

Understanding philosophical issues is significant for various reasons. Different paradigms lead to the examination of underlying phenomena in distinct ways. Philosophy not only describes several phenomena from multiple perspectives but also emphasizes the diverse types of knowledge that arise from observing the same phenomena through different philosophical lenses (Žukauskas et al., 2018). Each paradigm encompasses different assumptions regarding ontology, epistemology, axiology, and methodology, which reflect positivist versus interpretivist research positions. The main aim of this portion is to highlight an ontological as well as epistemological knowledge through the process of transforming beliefs into established knowledge. To examine the research phenomenon, a mixed-methods technique has been chosen.

When using mixed techniques, the researcher might need to adopt a position that not only addresses the objective social world but also incorporates subjective implications, allowing for inferences and interrelations with that social world. When evaluating various methodological approaches, the researcher may choose from quantitative, qualitative, or a combination of both quantitative (positivism) and qualitative (post-positivism) paradigms within a single study. Consequently, mixed methods research typically embodies a pragmatic approach as a philosophical system (Johnson & Onwuegbuzie, 2004). For instance, researchers often construct knowledge based on pragmatic principles (Creswell, 2014). Pragmatism is a philosophical framework that enhances findings through a mixed technique of inquiry, employing the necessary logic of justification to provide an appropriate methodological fit and diverse paradigms (Johnson & Onwuegbuzie, 2004). Furthermore, pragmatism as a philosophical approach perceives knowledge as an essential reality or a profound experience (Johnson & Onwuegbuzie, 2004). Pragmatists contend that existing truths, implications, and the boundaries of knowledge are not fixed; thus, knowledge can be changed, modified, or altered over time, with or without research.

The descriptive mixed-method research design, incorporating both QUAN and QUAL techniques, was employed to investigate the PWB and coping mechanisms of patients following OHS. This mixed-method strategy maximizes the study's strengths that cannot be addressed by a single-method approach by utilizing both QUAN and QUAL methodologies to provide a thorough grasp of the problem (Creswell & Clark, 2011). The results of quantitative studies cannot be extended to a larger population with the same degree of accuracy as the findings of qualitative research (Creswell, 2014). Consequently,

for complex problems, mixed methods are more suitable than mono-method approaches (Creswell & Clark, 2011).

Among the various strategies of mixed-method design, a concurrent triangulation design was employed in this study. In this approach both QUAN and QUAL data are gathered at the same time. Each data set was analyzed independently and then triangulated to assess convergence, corroboration, and correspondence of results across the different methods. The fundamental assumption of this approach is that quantitative and qualitative data offer distinct types of information, and together they produce complementary results (Creswell, 2014).

Regarding the study of PWB and coping with surgical stress, Ramesh and his team recommended a QUAN approach to further explain and generalize the findings (Ramesh et al., 2017). In contrast, another study by Sedaghat and his team advocated for a qualitative approach to explore the subject across different cultures (Sedaghat et al., 2019). Consequently, this mixed-methods research strategy was used to look at the PWB and coping mechanisms of patients following OHS in the Nepali context. This approach aims to enhance, illustrate, or clarify results derived from one method through insights gained from another. The present study is grounded in a pragmatic philosophical framework, emphasizing both positivism and post-positivism.

3.2 Nature of the Study

By converting beliefs into established knowledge, this study aims to investigate epistemological and ontological knowledge. Research on PWB coping strategies in relation to occupational health and safety, such as OHS stress, in the context of

hospitalized patients in Nepal is lacking. As a result, this study uses both quantitative and qualitative methodologies in an exploratory and descriptive manner. According to Creswell, mixed methods research is a methodology wherein the researcher gathers, examines, integrates, and makes conclusions based on both QUAN and QUAL in a single study or program of inquiry. By combining QUAN and QUAL data, the researcher can accomplish two goals at once: to better comprehend the subject being studied and to extrapolate findings from a sample to the entire population.

3.2.1 Epistemological and Ontological Consideration of this Study

The process of organizing, interpreting, and consciously experiencing sensory data is called perception. Both top-down and bottom-up processing are used. While top-down processing implies that a person's interpretation of these sensations is impacted by their preexisting knowledge, experiences, and thoughts, bottom-up processing implies that perceptions are created from sensory input. A person's perception and coping strategies might be influenced by a number of things. The internal and exterior surroundings are the two main groups into which these elements can be broadly classified. The internal environment pertains to a person's biological and psychological aspects, including their thought patterns, emotions, and psychomotor activities. In contrast, the external environment encompasses social and physical surroundings, such as ICU, operating rooms, patient wards, and the overall hospital environment. In this context, the researcher examines the nature of social reality in healthcare services, particularly concerning critically ill patients in the ICU following OHS.

In the surgical post-operative ICU, critically ill patients often rely on healthcare providers to meet their basic physiological needs. However, this perspective may not

fully capture the reality of their situation. Patients frequently depend on various sophisticated machines designed to support their needs; for instance, a patient may breathe with the assistance of a ventilator. Nevertheless, skilled healthcare professionals are essential for operating these machines effectively, tailored to the patient's specific condition. Assisting patients with their illness appraisals can significantly enhance their PWB (Rand et al., 2012). Furthermore, the quality of patient care in the surgical intensive care unit is influenced by the individual health status of the healthcare provider, encompassing physical, social, mental, emotional, and spiritual well-being while delivering care to patients.

Regarding the research methodology, there are two contrasting approaches to conducting the study. One approach is purely quantitative, requiring the researcher to maintain objectivity. Conversely, the other approach is purely qualitative, where the researcher adopts a more subjective stance, constructing reality to reach conclusions. An emerging alternative is triangulation or mixed methods, which may be the most effective strategy for the study.

When discussing QUAN and QUAL techniques, it is important to consider the perspectives of objectivism and constructivism in philosophy. The objectivist perspective posits that the use of sophisticated biomedical equipment in patient treatment (purely empirical) determines the psychological changes in the patient. This viewpoint primarily focuses on the machine, oxygen, and the patient's psychological responses. In contrast, the constructivist and constructionist perspectives explore the various grounded realities of the patient, such as the duration of ICU stay, the ICU environment, the selection of treatment methods, interactions, and cognitive processes.

The mixed-method approach is the most effective alternative for exploring the theme of this study and addressing the pre-set research questions. There are three primary research design methods: qualitative (more subjective), quantitative (more objective), and mixed design. This study focuses on the individual psychology of health and illness, examining how stressors induce stress and the resulting psychological changes in a patient's thoughts, mood, behavior, and outcomes. The details of the methodological framework for this study, which were developed during the initial conceptualization, are presented in Table 3.1.

Table 3.1

Epistemological and Ontological Concept of this Research Method

SN	Research Questions	Unit of analysis	Where	How the data collected	What to do with data
1.	What are the psychological changes in patients after OHS?	Individual patients	Post-operative ward of cardiac hospital	Questionnaire Observation	QUAN and QUAL analysis
2.	What are the contributing factors that bring the changes among them?	Individual patient	Cardiac hospital	Interview History taking Patient file review.	QUAN and QUAL analysis
3.	What is the PWB status of a patient after OHS?	Individual patient	Surgical ICU and ward	Questionnaire Observation	QUAN and QUAL analysis
4.	Why do those changes happen among patients?	Individual patient Caretaker	Surgical ICU and ward	Observation History taking Patient file review	QUAN and QUAL analysis
5.	How does the patient cope with those psychological changes and its outcome?	Patient, caretakers, and primary care provider	Cardiac hospital	Interview schedule Observation Physiometry measurement	QUAN and QUAL analysis

Table 3.1 shows the research questions, its purposes, unit of analysis, possible variables, setting, data collection techniques, method, and analysis. The set research questions were:

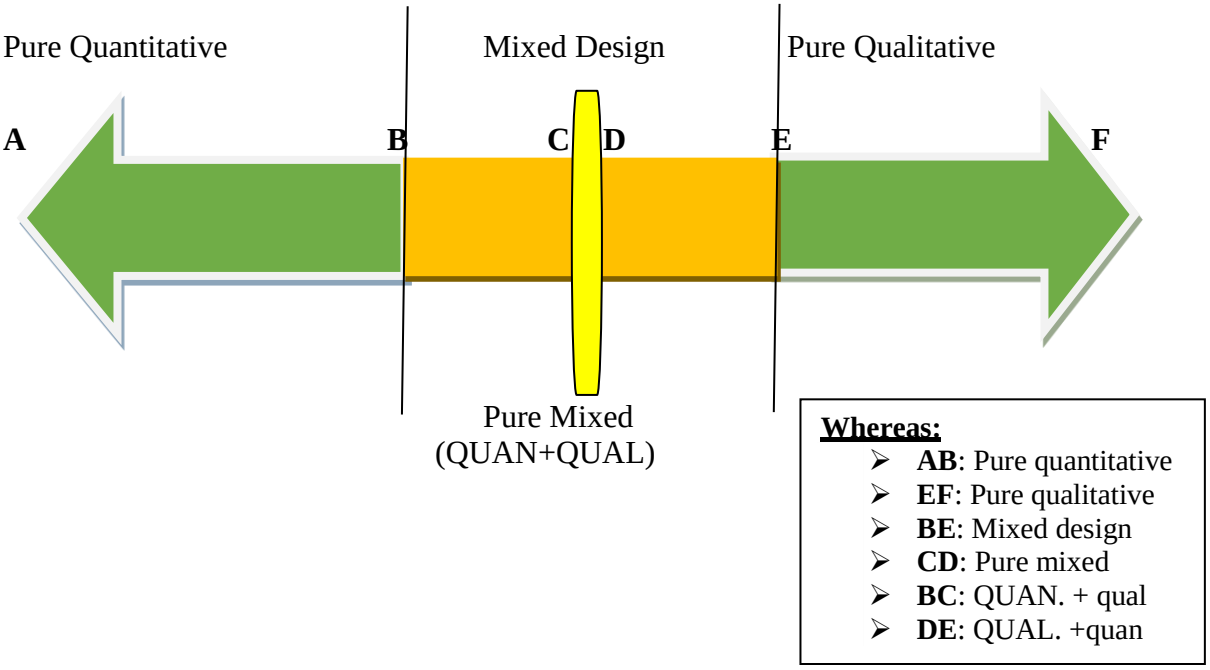
1. What are the psychological changes in patients after OHS?
2. What are the contributing factors that bring the changes among them?
3. What is the PWB status of the patient after OHS?
4. Why do those changes happen among patients?
5. How does the patient cope with those psychological changes and their outcomes after OHS?

The individual patients, caretakers, and healthcare providers are the unit of analysis of this study. The possible variables are psychological, physiological, and environmental with a study area in the post-operative ICU and ward in the cardiac hospital. Interviews, participatory observation, and the use of a coping checklist scale are the tools and techniques of data collection, and finally collected data are analyzed by using qualitative and quantitative techniques of analysis.

The perspectives from objectivism and constructionism about the research method seem contrasting. An objectivist considers the quantitative research method as a systematic, structural, positivist icon, scientific, experimental, traditional, and functional. On the other hand, constructionists considered qualitative research methods as phenomenological, humanistic, and interpretive. In the continuum, objectivism and subjectivism represent the opposite position with philosophical positions. The details of the continuum are presented in Figure 3.1.

Figure 3.1

Type of Study Designs Based on Literature



Source: Literature Review

3.3 Quantitative Study

3.3.1 Research Design

A framework, or the collection of techniques and steps used to gather and examine data on variables listed in a specific research problem, is known as research design. Both observational (descriptive, analytical, case-control, case study, and historical) and experimental (pre-experimental, quasi-experimental, and real experimental) research designs are the two primary categories. Based on the time frame, it is divided into longitudinal, cross-sectional, retrospective, and prospective research design. Similarly, based on the nature of the data it is categorized into the qualitative and quantitative design.

By producing numerical data, the quantitative research design is utilized to quantify the issue. It generalizes the results of a sample to the target population. The replicability of the result is higher than in qualitative studies. Though there are various types of research designs cross-sectional, descriptive-analytical design was adapted for this study. In this design, a researcher could meet the respondents once at a time according to the objectives. After that, information was gathered using a preset set of research instruments. Quantitative survey data were collected to meet the objective of the study.

Similarly, quantitative study design uses far more systematic data collection techniques. These techniques include a variety of survey formats, such as online polls, mobile surveys, kiosk surveys, in-person surveys, paper surveys, telephone structured interviews, website interceptors, longitudinal studies, and systematic observations. The sample size in this design is larger to increase the generalizability of the study.

3.3.2 Study Location and Rationale of the Site Selection

The field of study was Manmohan Cardiothoracic Vascular and Transplant Center (MCVTC), Kathmandu in Nepal. This is one of the leading super specialization tertiary level hospitals for cardiothoracic and vascular diseases treatment, where OHS are performed. Patients with all kinds of heart diseases are brought from all around the country to this hospital. In the hospital, different schemes from the government of Nepal for the patient's treatment are implemented. They provide health insurance, and free treatment for those patients having cardiac problems below 15, and above 75 years of age as children assistant program (CAP), and senior citizen assistant program (SCP)

respectively. *Bipanna Fund (BF*), and Rheumatic Heart Disease Fund (RHDF) have been implemented. In this regard, the researcher selected this study site.

Manmohan Cardiothoracic Vascular and Transplant Center

On Baishakh 13, 2066, MCVTC, a specialized center of Tribhuvan University's Institute of Medicine, was founded. It is recognized as a center of excellence for vascular, thoracic, and cardiac care. Both inpatient and outpatient service departments are available at MCVTC (https://www.mcvtc.org.np/). Among them, the general ward, annex ward and cabin, and high dependency unit (HDU) were selected as the data collection site in research because in this units patients with OHS were admitted for super specialization treatment for the CVDs.

3.3.3 Population of the Study

The study's population was the patients admitted to MCVTC after OHS. In these hospitals, patients having cardiovascular problems are admitted and given curative and rehabilitative treatment services. In the previous year 2076/77 there was a total of 3345 patients were admitted due to cardiac problems among them 450 patients underwent cardiac surgery. The admission rate was affected by COVID-19 (Unpublished data, retrieved from the record of MCVTC admin, 2076/77).

3.3.4 Sample Size

An adequate sample is needed to apply certain statistical procedures and generalize the findings to the intended population. Therefore, the estimated sampling size was 424 which was calculated by applying the following formula

$n_0 = z^2 * p * q / d^2$" (Crochan, 1977)

Where d=0.05 is the study's precision of error, p=0.5, q=1-p=0.5, and the 95% confidence interval's confidence level is z=1.96. However, the exact prevalence of low PWB and ineffective coping with surgical stress of the patients after OHS in the Nepalese context is not available. Therefore, to calculate sample size p is assumed as the median, or 50% taken as the prevalence

Where,

The sample size for infinite population (n_0) = $z^2 * p * q / d^2$"

$= (1.96)^2 * 0.5 * 0.5 / (0.05)^2 = 3.84 * 0.25 / 0.0025 =$ 384.16 i.e. 385

To adjust for possible subjective bias, the sample size included an additional 10% of respondents in the calculated sample size will be 38.4 i.e. 39. Hence, the sample size was 424 (385 + 39) for the study.

3.3.5 Sampling Technique

The two primary categories of sampling procedures are probability sampling and non-probability sampling. Simple random sampling, systematic random sampling, stratified random sampling, cluster random sampling, area sampling, and multi-stage random sampling are all examples of probability sampling procedures. Convenience sampling, purposive sampling, sequential sampling, snowball, panel sampling, and quota sampling are examples of non-probability sampling methods.

A successive sampling strategy was employed for this investigation. A researcher would gather data using this consecutive sampling technique from participants who fit the study's inclusion criteria and are available at the data collection location during the data collection period. The setting was hospitals for this study, so it was difficult to develop the sampling frame for the probability sampling because the number of patients admitted for OHS was different. Therefore, a researcher chose the consecutive sampling technique for this study.

3.3.6 Criteria of Inclusion and Exclusion

3.3.6.1 Criteria of Inclusion

1. Individual with OHS who was admitted in MCVTC during the periods of data collection.
2. Patients with OHS can communicate in the Nepali language.
3. Patients whose health status is stable and transferred from the ICU to a HDU or general ward and cabin after OHS. On average it takes 2-4 days to transfer the patient from ICU.

3.3.6.2 Criteria of Exclusion

1. Patients with mental health issues or concomitant conditions.
2. Patients were unable to communicate due to their critical health conditions.
3. Patients who were children less than 12 years.

3.3.7 Tools for Data Collection

Investigating the state of PWB and coping with OHS stress, as well as the ways in which various factors impact and correlate with it, was the aim of this study.Therefore, some instruments were selected to collect the data on sociodemographic information, PWB, and coping with OHS stress as appropriate and relevant for the study.

Four sections make up the apparatus employed in this investigation. Sociodemographics in Part 1, Ryff's PWB scale in Part 2, the Coping with OHS Stress Scale in Part 3, and items for observation of patient's and interview questions for a caretaker in Part 4. The data collection tool is attached in Appendix C (English version) and Appendix F (Nepali Version). Previous studies explored PWB and coping with stress, but most questionnaires had been developed for different or narrower purposes as well as were developed for use in different study settings. Therefore, after reviewing the relevant literature, the researcher made the decision to create a set of new questionnaires for the current study. Parts one through four of the instrument were covered in the sections that follow.

Part One: Socio-demographic Data

This part of the instrument contained questions related to the sociodemographic variables of the patients with OHS. A total number of items in this section was 12. The questions of the section measured sociodemographic characteristics like age, sex, educational status, living location, marital status, religion, daily physical activities, family type, caretakers, payment method, and reasons for OHS (see Appendix C).

Part Two: Ryff's Psychological Well-being

Previously, tools were constructed by asking a single general question to explore their psychological and emotional state toward life. While this kind of well-being survey is straightforward and easy to administer, it might be challenging to gauge someone's level of happiness with a single question. The satisfaction with life scale by Diener et al. (1985), the positive and negative affect scale by Watson et al. (1988), PWB by Ryff (1989), and the subjective happiness scale by Lyubomirsky and Lepper (1999) are some of the validated self-report measures of happiness, affect, and life satisfaction that are used today.

One of the most popular and verified scales in the world is Ryff's 42-item PWB scale. This scale encompasses six well-being dimensions, including self-acceptance, positive interpersonal relationships, environmental mastery, personal growth, autonomy, and purpose in life. There are seven entries in each domain. Patients with OHS were treated using this six-factor paradigm. The six domains with their items are presented below:

1. Autonomy subscale items are 1, 10, 13, 21, 24, 35 and 41.
2. Environmental mastery subscale items are 3, 12, 15, 23, 26, 36, and 42.
3. Personal growth subscale items are 2, 5, 14, 17, 25, 28, and 37.
4. Positive relations with other subscale items are: 4, 7, 16, 18, 27, 30, and 38
5. Purpose in life subscale items are 6, 9, 20, 29, 32, 33, and 39.
6. Self-acceptance subscale items are 8, 11, 19, 22, 31, 34, and 40.

This six-factor model is supposed to be used in patients with OHS.

Respondents use a 7-point rating scale to indicate how much they agree with 42 statements. The frequency of PWB was rated on a scale of 1 to 7, where 1 represented strongly disagree, 2 disagreement, 3 disagreement, 4 indecision, 5 agreement, 6 agreement, and 7 strongly agreement. Each domain has a score between 7 and 42, with higher values denoting higher levels of wellbeing. The majority of the items are negative. The negatively expressed items (7: Strongly disagree, 6: Disagree, 5: Somehow disagree, 4: Undecided, 3: Somehow agree, 2: Agree, and 1: Strongly agree) were scored in reverse position. Items 5, 8, 9, 10, 12, 14, 15, 16, 18, 19, 24, 25, 26, 28, 30, 32, 33, 34, 39, 40, and 41 have the opposite scores.

For all scale domains, the midpoint of the score was regarded as the cut-off point (Blasco & Alsinet, 2022). Low PWB was defined as those who scored below the cut-off point, and high PWB was defined as those who scored over the cut-off point.

Part Three: Coping with Surgery Stress Scale

The Ways of Coping Questionnaire, the COPE inventory, the Carver brief COPE inventory, the proactive coping inventory, the dyadic coping inventory, the coping with surgical stress scale, the coping self-efficacy scale, the proactive coping inventory, the Miller (1987) measure of monitoring and blunting, and others are used to identify coping mechanisms. The researcher needed to choose the best scale which measure coping with OHS stress. The coping with OHS stress scale measured the exact outcomes of the study. Based on an extensive literature review researcher developed the 20-item coping with OHS stress scale to meet the study's objective.

Process of Coping with OHS Stress (CwOHSS) Scale Development

Before implementation, there are certain preparations have been made. This is why researchers go through an extensive literature search. The identified steps of tool construction are planning, preparation, try-out, evaluation, and finalization. While constructing the coping with OHS stress scales, the researcher went through all these steps respectively.

In the planning phase

The textbooks, reference books, journals, test manuals, previous coping scales, other reports, and old queries pertaining to OHS stress were to be thoroughly examined. Different subject areas should be given weight while reviewing the literature. After then, several goals, item types, and domains were chosen. Finally, different categories and total marks of the tool were decided in the step of tool construction.

Firstly, areas of coping with OHS stress were identified by reviewing literature on stress during hospitalization, stress due to surgery, causes and effects of stress, anxiety, responses to the stress, stressors, surgical treatment for chronic diseases, coping with coronary artery diseases, and coping strategies (Krohne et al., 2000; Dziedzic & Hammond, 2010; Hadlandsmyth et al., 2017; Shrestha & Singh, 2017; Jabłoński et al., 2019; Košir et al., 2020; Tian et al., 2021). After this literature review, a total of 30 items were identified to reflect the possible coping items for OHS stress.

To ensure its validity consultation was done with colleagues, experts in the field of psychology (clinical psychologists, psychiatric specialized nurses, sociologists, surgeons, etc), research supervisors, and statisticians. After developing a format for the

instrument, it was reviewed by three Ph.D. scholars from psychology, and sociology. Then it was given to three clinical psychologists to review. Instrument reviewers were also asked to write down any concerns or suggestions about the clarity of each item. Items that were identified as inappropriate were discussed with research advisors and refined. Based on the feedback of experts, the following modifications were made to the instrument.

Initially, in part III, a list of 30 items for coping with OHS stress was made and it was brought down to 25 items according to the advice of Ph.D. scholars, clinical psychologists, preliminary try-out, and research advisors.

In the preparation phase

The researcher created the test items, administration instructions, scoring, and question-by-question analysis chart in this second stage of tool building. This scale consists of five domains of coping with OHS stress such as reflection, belief and support, religious, reassurance, and acceptance. Each domain consists of five items.

On a 4-point Likert scale, where one represents never and four represents very frequently, respondents indicate how much they agree. Each domain has a score between 5 and 20. The total score was between 25 and 100. The coping skills were categorized as ineffective coping, moderate coping, and effective coping. Those who scored less than 50 % were considered to have ineffective coping strategies. Those who scored 50% to 75% were considered as having moderate coping, and those who scored more than 75% were considered as having effective coping.

In the try-out phase

In this step of tool development, the researcher used to collect data in two phases such as preliminary try-out and final try-out. In the preliminary try-out researcher had collected data from 42 patients who undergone OHS. After the preliminary try-out, five items were removed according to the advice of Ph.D. scholars, clinical psychologists, and research advisors, and found ambiguous while collecting data. In the final try-out researcher collected the data from an adequate 200 OHS patients. In order to determine the discriminating value of the items, the number of items that should be included in the final form of the test, the time limit for the final form, and the defective or ambiguous items, test.

Then scoring would be determined. The instrument includes 25 items with 4 point rating scale. After this step of the tool construction, the items were limited to 20. five items were removed after the exploratory factor analysis which is ambiguous, and weak in the mechanism of test administration. The result of exploratory factor analysis showed different item numbers ranging from one to six in five domains which was presented in Table 3.2 in detail.

In the evaluation phase

Following scoring, the test was assessed to determine its validity and reliability as well as the quality of its items. In order to ascertain the test's validity, reliability, and usefulness, this phase's objectives were to study the items and establish whether they were worth including in the test (item analysis). Internal consistency with the entire test,

item difficulty, and item discriminating power will all be analyzed. This tool's Cronbach's alpha was 0.750.

Table 3.2

Exploratory Factor Analysis of Coping with OHS Stress using Principle Component Analysis and Varimax Rotation

SN	Item	Cronbach's alpha	No. of Item
A.	**Reflection**		
1	If the open heart surgery is not successful, I imagine my life will be over.	0.79	4
2.	I wonder about the possible complication of open heart surgery.		
3.	I consider my friends' negative experiences with open heart surgery		
4.	I try to think of everything about open heart surgery.		
B	**Belief and Support**		
1.	I reassure myself that I trust the doctors and nurses who examine me and perform open heart surgery.	0.82	6
2.	I reassure myself that everything will be fine after the open heart surgery.		
3.	I try to see the positive side of open heart surgery.		
4.	I reflect on the support I'm getting for the open heart surgery in the hospital.		
5.	I chat to people in an effort to boost my confidence.		
6.	I hope for the comfort and support of the family regarding my treatment		
C	**Religious**		
1	I believe in God and praying	Single item	
D	**Reassurance**		
1.	I discuss open heart surgery with friends who are medical professionals.	0.66	4
2.	I tell myself, I'm not in the worse situation as others.		
3.	I remind myself that I have faced much more stressful situations before.		
4.	I read books and magazines about heart disease and treatment		

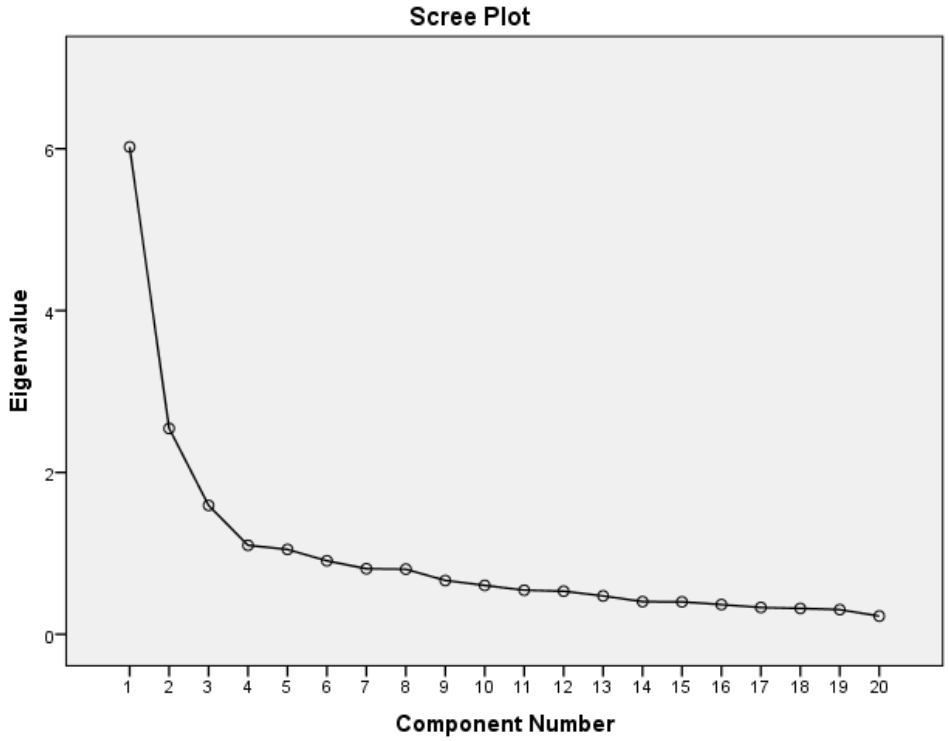
E.	**Acceptance**		
1.	I sleep a lot even after open heart surgery		
2.	I informed myself about all the advantages and disadvantages of the open heart surgery.		
3.	I have a lot of questions for the doctors regarding open heart surgery.	0.79	5
4.	I tell myself that some individual have had successful open heart surgery.		
5.	I remind myself that others are facing the same problems as me.		
Composite Reliability Score (α)		0.750	20

Aggregated Variance Extraction (AVE): 61.53%
Source: Field Study 2021/22

As shown in Table 3.2, exploratory factor analysis of coping with OHS stresses using principle component analysis and varimax rotation. The total 20 items could be subdivided into 5 components based on the item analysis. However, religious components have a single item which is very crucial for the coping statistically as well as from the qualitative finding. The scree plot for component number, which was formed by exploratory factor analysis, has been presented in Figure 3.2, the scree plot also provides the ideas of five domains or strategies of the coping tool, which were found reliable and have a reliable score of more than 0.66.

Figure 3.2

Component Number Scree plot



Source:- Field Study 2021/22

In the finalization phase

Good items with a suitable degree of difficulty and adequate discriminating power are kept for the final test during this phase. The average time taken by 42 respondents from the initial data collection was used to calculate the amount of time needed for the test. A representative sample of 200 people was then given the test, and the test papers were graded. Lastly, data for the current study was gathered using the 20-item tool.

This scale consists of five domains of coping with OHS stress such as reflection, belief and support, religious, reassurance, and acceptance. Each domain consists of five items. Those five domains consist following items:

1. Reflection subscale items are 8, 9, 10, and 19
2. Belief and support subscale items are 1, 3, 7, 11, 14, and 15
3. Acceptance subscale items are 2, 5, 12, 13, and 17
4. Reassurance subscale items are 4, 6, 16, and 18
5. Religious subscale items are 20 (single item)

In religious subscale content only a single item, which was a very important strategy for coping with the difficult situation for humans. People started trusting god when no hope was going to be seen by them. On a 4-point Likert scale, with one denoting never, two sometimes, three always, and four almost usually, respondents indicate how much they agree. Overall Score ranged from 20 to 80 for the final 20-item scale. The coping skills were categorized as ineffective coping, moderate coping, and effective coping. Those who scored less than 50 % were considered to have ineffective coping strategies. Those who scored 50% to 75% were considered as having moderate coping, and those who scored more than 75% were considered as having effective coping. Percentiles were used to categorize the raw results (Rajesh et al., 2022). Average taking was another area on this scale. For the 2x2 table (chi-squared test analysis), individuals who scored below the mean were classified as having ineffective coping skills, and those who scored above the mean were classified as having effective coping abilities. Both categories were applied to analyze and interpret the findings.

Part Four: Observation and Interview

For this portion of the questionnaire, items were selected from a mini mental status examination for the section's general appearance and behavior. This part contained two sections such as A and B. Section A, consisted of an observation sheet. A researcher observed the patient's hemodynamic status included patient's vital indicators, such as their temperature, pulse, blood pressure, respiratory rate, oxygen saturation, and pain. Likewise, a researcher observed the patient's general appearance and behavior such as facial expression, body posture, mannerisms, eye contact, rapport, social behavior, dress-up, grooming, and physical build-up. In section A, there were a total of 17 items (see Appendix C for English and Appendix F for the Nepali version of the tool).

On the other hand, section B contained a few questionnaires for unstructured interviews taken for the caretaker who would be continuous with the patient during the hospital stay and at home. There are a total of five items for the interview of the caretaker related to perceiving behavior change of the patient after the decision was taken for OHS by the caretakers.

3.3.8 Pilot Study

Before starting the definitive study a pilot research was carried out to evaluate the clarity, comprehension, reliability, and validity of an instruments. Pilot study test the proposed study procedures to evaluate the fesiablilty of collecting data, determining the time required to collect survey data from the patient with OHS. It also identifying modifications needed in the design of the study, as well as for finalization of the

instrument (Arain et al., 2010). According to Teejlingen and Hundley (2001), a pilot study is a tiny study that aids in the design of a larger confirmatory investigation.

It was conducted among the patients with major surgery done in the tertiary care hospital of Tribhuvan University, Kathmandu. Before data collection, administrative permission for data collection was taken from hospital's administration. There were two stages to the data collection. In the initial stage, information was collected from 42 patients after cardiac surgery and cardiac intervention. In the second phase, data was collected from 200 patients after cardiac surgery and intervention. Prior to data collection, patients gave their informed consent to participate voluntarily in the study. The obtained questionnaire sets were then used for analysis.

The instrument's reliability Cronbach's alpha (α) value was computed to ensure internal consistency. A standardized alpha coefficient was 0.750 for the coping with OHS stress scale (see table 3.1), which was highly significant at a 99% confidence level. For the newly developed instrument, this result indicates a reliable instrument (Mohamad et al., 2015). Therefore, this instrument is considered to be adequate and reliable for use in the final study for measuring coping with OHS stress of the patients. After discussing with research advisors, and statistician, 5 items that had alpha value <0.45, were discarded from the questionnaire based on exploratory factor analysis results for the completed questionnaire version.

Cronbach's alpha (α) for Ryff's PWB scale ranged from 0.70 to 0.78, indicating its validity and reliability (Sasaki et al., 2020). The PWB scale's validity and reliability have been proven in over 30 languages and cultural contexts (Ryff, 2018). The Nepali version tool of Ryff's PWB scale is 0.823 (See validity and reliability). Regarding the feasibility

of the study, a pilot study revealed that it would be difficult to arrange a meeting with patients at one time. It takes nearly one hour to collect data completely from patients. Therefore, the researcher arranged the collection of data during their free period of the patients when doctor's rounds, nursing care, medication, and other medical procedures were not planned.

3.3.9 Translation and Back Translation

It was very important to ensure the research participants clearly understood the questionnaire items for relevant information while collecting the data. Humans can understand well if communication is made in their mother tongue. It became easier to understand questionnaires that were in the Nepali language for Nepalese participants. During the pilot study, the tool (from part one to part four) was developed in the English language. The entire questionnaires used in the present study were translated into the Nepali language for cross-cultural adaptation.

Firstly, the researcher translated entire questionnaires into Nepali. All the possible efforts were made to the questionnaire items to provide exactly similar sense and meaning to the original statement. Then the translated copy was provided to a bilingual scholar who translated the questionnaire back to the English version. Later, both forward and backward translations were discussed together on mismatches of back-translated items with original questionnaires to ensure exact Nepali translation. The items of the back-translated copy whose meaning was perceived to differ from the original questionnaire were reviewed again by both translators and adjusted Nepali version whenever necessary. The final review was done by a team of experts (see data collection tool), comprising the research supervisor and co-supervisor related to this study.

At the end of the translation process, a pre-final version of the questionnaires was conducted in the above-mentioned targeted group. The pilot study was conducted for the clarity of expression of instruments, items, and scoring system (see pilot study). After completing the questionnaire, respondents were questioned about their interpretations of each item. Both the meaning of items, overall relevance, and meaning of their response were explored.

Finally, the researcher made necessary corrections in the translated copy from the target group's feedback. From the responses to all these activities, confused meaning items and points of difficulty in understanding language for participants were noted and corrected. The questionnaires in the Nepali language were finalized before collecting data, to ensure the face validity of the questionnaire. Examples of corrections made are presented in Table 3.3, similar correction was done in the majority of items of the PWB and coping with OHS stress tool.

Table 3.3

Example of Correction Made in Final Version Tool

	Item English version	**Translated Nepali version**	**Corrected Final version**	**Tool**
1	I like most of my personality	मलाई मेरो व्यक्तित्व प्राय मन पर्छ	मलाई आफ्ना आचरणहरु र बानीव्यहोरा धेरै मन पर्दछ ।	PWB Tool
2.	I believe in God and praying	म भगवान तथा प्राथनामा विश्वास गर्छु	म भगवान तथा पाठपूजामा विश्वास गर्छु	CwOHSS Tool

Source:-Field Study, 2022/23

3.3.10 Reliability and Validity of Present Tool

3.3.10.1 Reliability

It was necessary to obtain the scale reliability in the data of the present study before analysis of the result. For this purpose, reliability analysis was calculated. The details of the reliability coefficients (Cronbach alpha) of the constructs of the research tools are presented in Table 3.4.

Table 3.4

Reliability Score of Preliminary Test, Pilot Study, and Present Study

A. Psychological Well-being Scale

SN	Description	Sample	Cronbach's α	Items
1.	Pre-test	42	0.70	42 items
2.	Pilot study	200	0.823	42 items
3.	Present study	424	0.913	42 items

The original PWB scale's reliability score ranged from 0.70 to 0.78 (Sasaki et al., 2020).

B. Coping with OHS Stress Scale

1.	Preliminary-test	42	0.695	25 items
2.	Pilot-test	200	0.750	20 items
3.	Present study	424	0.841	20 items

Source:-Field Study, 2020/21 to 2022/23

3.3.10.2 Validity

It was necessary to obtain the scale validity in the data of the present study before analysis of the result. For this purpose, the validity of the scale was analyzed by factor analysis. Exploratory factor analysis (EFA) (see table 3.2) was calculated for the coping with OHS stress scale with the pilot study data. Path analysis for the confirmatory factor analysis (CFA) was calculated for both psychological and coping scales with the present study data. Figures 3.3 and 3.4 show the specifics of the route analysis for the construct's CFA.

Figure 3.3

CFA of PWB Scale Concerning Cronbach's Alpha

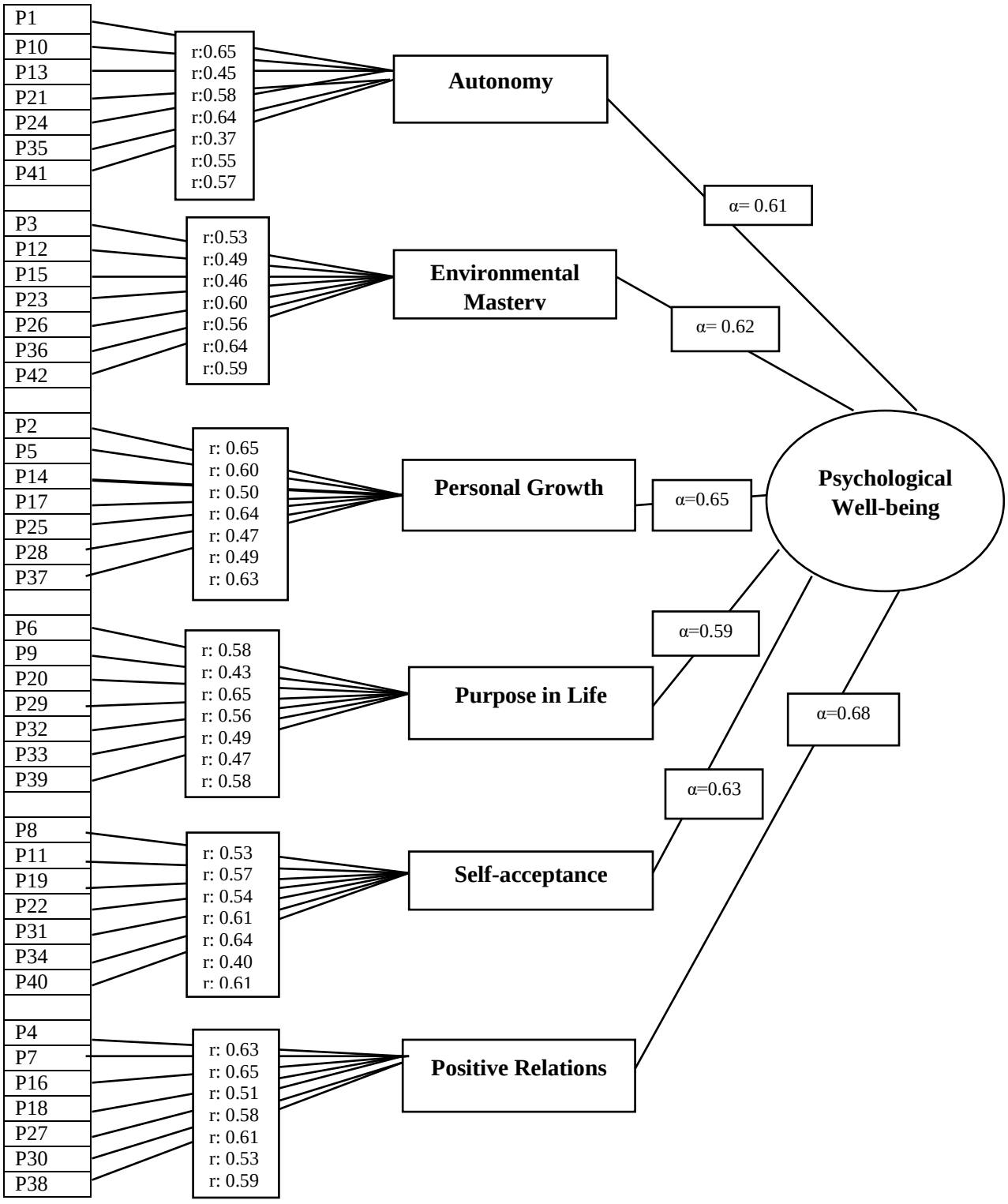


Figure 3.3: Path analysis diagram of confirmatory factor analysis of the PWB (Source:- Field Study, 2022/23)

Figure 3.4
CFA of Coping with the OHS Stress Scale concerning Cronbach's Alpha

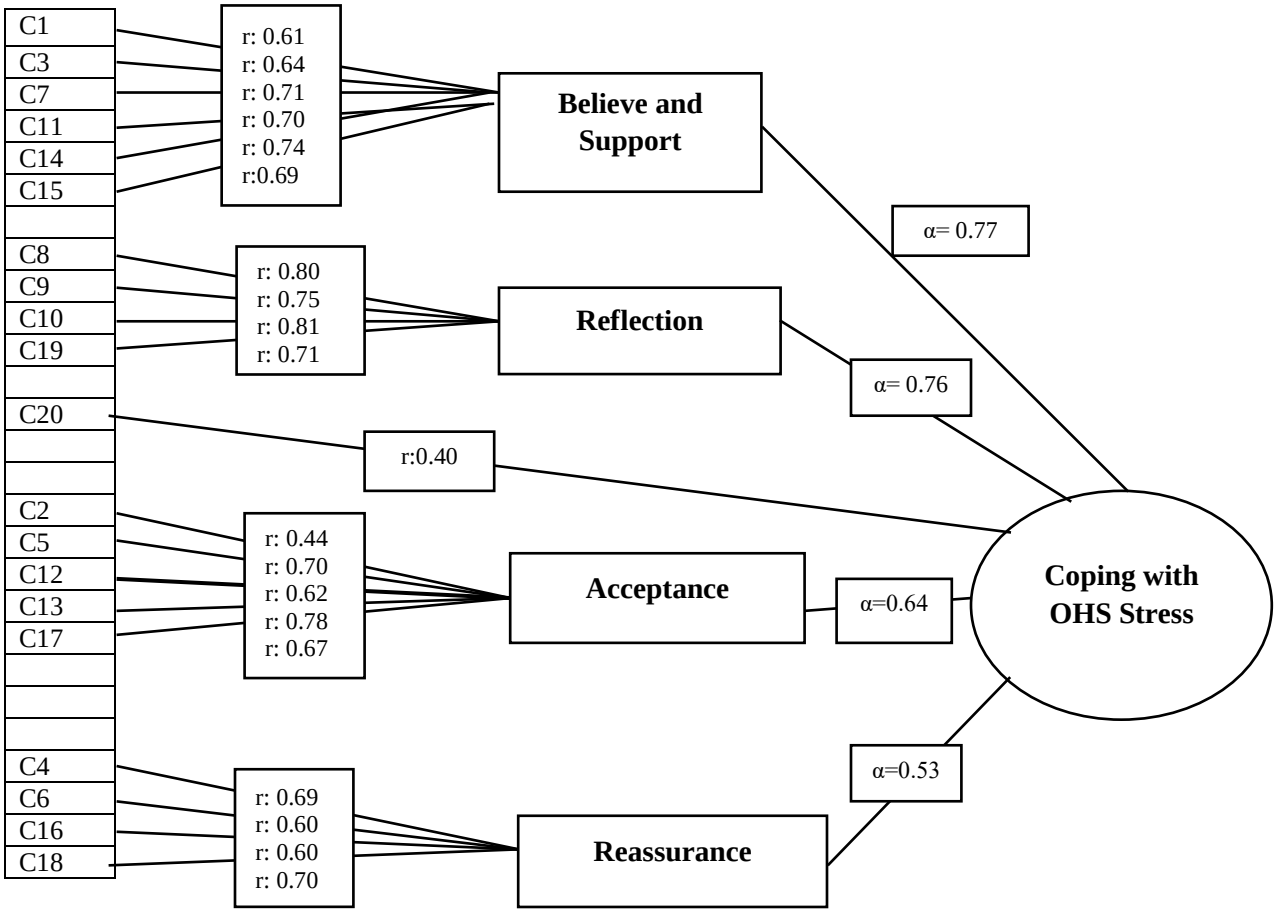


Figure 3.4: Path analysis diagram of confirmatory factor analysis of the Coping with OHS Stress Scale
(Source:-Field Study, 2022/23

3.3.11 Data Collection Procedure

The Central Department of Psychology research committee and the Office of the Dean, Faculty of Humanities and Social Science, Kirtipur, gave their approval to the research. The Institute of Medicine, Maharajgunj's Institutional Review Committee granted ethical clearance. A meeting with hospital administrators was scheduled prior to

data collection, and the hospital authority granted approval. The 14-month data collection period began in June 2022 and ended in July 2023.

Before conducting the interview schedule researcher identified the eligible respondents based on inclusion criteria every day. Then respondents' file was reviewed before being visited individually during their free time when clinical procedures, nursing care, and doctor's rounds were not occured. The researcher started the communication with the patient by greeting and self-introducing to establish a trustful interpersonal relationship. They explained the nature and objectives of the study. To maintain their right to self-determination, consent was taken from the participants for their voluntary participation before starting the interview schedule. A survey form was given to the participant who could able to read, comprehend, and write, likewise, an interview schedule was conducted for the participant who couldn't be able to read, comprehend, and write.

Participants could leave at any time even after starting the interview schedule or distributing the survey form without asking for any reason to discontinue. Respondent's predetermine code was mentioned in the data collection tool instead of their name. For the illiterate patients, the researcher read out the question loudly followed by all options until the patient understood the question and chose the option for the collection of the data. Respondent was allowed to choose the best response for them. However, for literate respondents, self-administration of the questionnaire was allowed to collect data from part two and part three. The interview schedule took 30-40 minutes for quantitative data collection and 20-30 minutes for observation and interview with the caretaker. The data collection was formally ended by giving thanks to the patients and caretakers. The

researcher herself collected the data from the patients and caretakers. A total of 424 sample units were used for analysis purposes for the study.

3.3.12 Data Analysis Process

Before proceeding with the analysis, data were checked for completeness and usability for analysis. The 20 incomplete sets of questionnaires were not included in the analysis. Other 20 patients were added and completed the sample size of 424. The pre-coded questionnaire was used, so that data was entered in Epidata version 3.1 after checking its completeness and coding data manually. The data was exported to IBM SPSS statistic version 16 for analysis. Initially, descriptive statistics was applied to check the distribution of data. For the descriptive analysis frequency, percentile, mean, median, interquartile range, and standard deviation were calculated. To facilitate analysis, continuous data were converted into categorical data. Then, before applying inferential analysis statistics, data normality was tested with the application of the Shapiro-Wilk test to the main outcome variables. The *p-value* of this test for the mean frequency of PWB was 0.061 (>0.05) and the mean score of coping with surgical stress was 0.000 (<0.05). The result rejects H_0 of the Shapiro-Wilk test and shows a normal distribution of PWB data. However, the result accepts H_0 of the Shapiro-Wilk test and showed coping with OHS stress data was not distributed normally. Therefore, parametric tests were applied to draw inferences from PWB and non-parametric tests were applied to draw inferences from coping with OHS stress data.

Firstly, univariate analysis was applied to study variables. Continuous variables such as age, frequency of PWB score, and coping with surgical stress score were calculated for mean and standard deviation. Similarly, frequency, median, and

interquartile range were calculated for all the domains of PWB and coping with surgical stress at a 95% level of confidence interval. Qualitative variables were calculated for frequency and percentage. Then data were transformed to develop new categories of variables and data were computed to calculate the total mean score of the variables for further analysis.

Afterward, Pearson and Spearman's correlation was employed to check relationships among variables of PWB and coping with surgical stress respectively. The chi square test was done to identify the linkage between the independent and dependent variables. To investigate the predictive value of different socio-demographic, hemodynamic, OHS-related variables, and PWB, linear regression models were constructed (Pagano & Gauvreau, 2000). In univariate analysis, each variable with an association of *p-value* ≤ 0.01 was included in a regression model. Before applying linear regression, the data linearity of dependent variables and data multicollinearity of independent variables were checked. Variables having *VIF <10* were included in the regression model. Finally, the best predictive model was constructed using a forward selection and backward elimination method (adding the variable that improves the model most and deleting those variables that had the weakest association with PWB).

3.4 Qualitative Study

3.4.1 Research Design

In contrast to quantitative design, the qualitative study design focuses on generating a hypothesis based on emerging themes. This kind of study, known as exploratory research, aims to understand underlying motives, views, attitudes, and

reasoning. It explores the issue more thoroughly and comes up with solutions after exposing the discussed patterns in ideas and viewpoints.

Mixed-method study designs come in six different varieties. According to Creswell (2013), these are concurrent triangulation design, concurrent embedded design, concurrent transformative design, sequential explanatory design, sequential exploratory design, and sequential transformative design. In this study, a concurrent triangulation design was adapted to meet the objective of this study.

Qualitative methods that seek to understand attitudes, experiences, behaviors, and the meanings of the phenomena that people give to them (Johnson & Onwuegbuize, 2004). This method was applied to ensure comprehensive and multifaceted data that is essential for understanding live experience (Kakkori, 2009) of the caretaker of the patients with OHS with PWB and coping with surgical stress while caring the near one.

Participant and non-participant observation, in-depth interviews, and focus groups are examples of qualitative data collection techniques. Due to the in-depth nature of the design, the sample size is usually restricted. Here, the caregiver for the OHS patients was interviewed in-depth. The researcher was able to explore personal and behavioral issues in great detail because to the in-depth interview. This approach allowed participants to focus on their individual experiences while caring for the OHS patients closely. This enabled the researcher to capture the human experiences to provide a better understanding and present the caretaker’s subjective experiences with clarity and meaning.

3.4.2 Study Location

The research setting for this study was MCVTC as used with the quantitative portion of this study.

3.4.3 Population of the Study

Caretakers of the OHS patients admitted to MCVTC, Maharajgunj were population for this qualitative study.

3.4.4 Sample Size and Sampling Technique

In the qualitative study, the number of sampling units until data saturation is considered a representative sample. However, its main aim is to understand the depth as well as breadth of the subject matters at a meaningful level. The analysis of a large number of in-depth interviews would simply be unmanageable; therefore small-scale sample approach was applied in the qualitative study according to heterogeneous or homogenous samples (Wilmot, 2005; Sharma, 2017).

Six caretakers who were with the patient throughout their stay in the hospital, who expressed interest in taking part in in-depth interviews, and who gave consent for repeated visits were selected purposively from the parent population of the patients with OHS. In order to get the detailed information required to comprehend the intricate experiences of the caregivers while providing care for the patients with OHS, the researcher employed the purposive sample technique to choose cases that were information-rich.

3.4.5 Research Instrument

With the assistance of a literature study and discussions with the research adviser and subject matter experts, the researcher created a semi-structural interview guide to explore the experiences of those who care for OHS patients. The interview guideline consisted of five open-ended questions (see part four, Appendix C and F) of the parent instrument portion in the quantitative phase of this study. This is designed to elicit phenomena of perception and experiences from the selected six participants of the study. Those caretakers who had taken care of the patient before, during, and after OHS were interviewed by asking an open-ended questionnaire. For example, "Nowadays, what is the usual content of conversation of the patient with you?" To investigate further and clarify the objective of the study, additional probing questions were formulated and used in the period interview by the researcher according to the need for probing. These questions included "I want to know from you why you perceived those behaviors as change behavior of patient? Could you give me an example?"

One research assistant, who had received training prior to data collection, oversaw the use of a tape recorder and notebook to capture interview sessions and document noteworthy talks. A tape recorder was used because it was impossible to write down all the conversations in a diary, and the researcher did not want to miss even a single word of the respondent's verbatim.

Trustworthiness

Trustworthiness of the in-depth interview guideline was maintained by doing pre-testing of a qualitative study. Before proceeding actual study, an in-depth interview was

conducted with two caretakers of the patients with OHS to identify probable probe questions for complete enumeration. After the pre-test, broad open-ended in-depth interview guideline was refined for the final study.

Broad, open-ended questions were asked at the beginning of the interview to allow the caretaker to talk freely. Jargon words were avoided as much as possible during the interview in order to improve the quality of the data. The interview was performed in plain colloquial Nepali. During an interview, the researcher observed and recorded the caregivers' nonverbal and vocal cues. The interviews were audio recorded using a tape recorder that has been re-checked for functionality. Throughout the data collecting and analysis procedure, the researcher's preconceived notions were bracketed. The researcher herself transcribed the full interviews.

The researcher did an in-depth interview and transcribed it verbatim, supplemented with field notes and observational hints, in order to preserve credibility or faith in the veracity of the findings. Similarly, during the audit trial with tape recordings, the transcriptions were read multiple times to gain a feel of the entire. Then it was matched with field notes, gestures, and body language of the caretakers before analyzing the data.

Data was gathered until it reached saturation in order to preserve its stability and dependability. To guarantee that the same meaning was gleaned from many interviews, an average of two to three interviews were done with each participant. In a similar manner, the verbatim transcription was confirmed by contacting the individual research participants to validate the interpretation.

By making sure that the meaning was relevant throughout the transcription process and discussing and validating important components and structure with the research adviser prior to the final interpretation, conformability was preserved. It was then improved by having a third-party clinical psychologist validate the transcription.

3.4.6 Procedure of Data Collection

The researcher recorded the participant's identifying code, interview dates, time spent on various research activities, study-related expenses, and study-related meetings in a standard paper calendar diary prior to data collection. Throughout the quantitative data collection period, data was gathered simultaneously.

The researcher identified the caretaker meeting the study criteria purposively during the distribution of quantitative data collection of the study. Then the researcher approached the individual caretaker after quantitative data collection. They were requested to participate in in-depth interviews. This process was continued until the target (six) number of participants was achieved. After selecting the participants purposively, verbal consent for participation was obtained, and the contact details of the participants were noted. Then the participants were contacted individually to ensure consent for their voluntary participation afterward date, time, and place for the interview were established mutually with the caretakers.

For data collection, a research assistant was hired and trained to use digital recorders during interviews. She was made responsible for recording interviews and the researcher was responsible for taking interviews. On the first visit for an interview, the researcher explained about research in detail to the participants and obtained consent

before the interview. To maximize their comfort in the physical environment and privacy of them, interviews were arranged in a separate room. The interview was conducted in the Nepali language by using the unstructured interview guide, as Nepali was the national language for both of us. Before starting the formal interview, an informal conversation was started to put the caretaker at ease environment. Then to enter into the real phenomena of research, a pre-scripted open-ended general question was asked to explore the caretaker's experience of PWB and coping with surgical stress of the patients with OHS.

During the interview, efforts were made to engage each caretaker in the interview and to ensure clarity of information obtained from them asked by probing/focused questions. These additional questions were generated according to the situation of interviews such as, "Can you give me an example of what you mean by that?", "What happened next?" etc. each interview lasted for 10-20 minutes.

A digital voice recorder was used to capture the audio of each interview. The caregivers and the interviewer agreed on a time, date, and location for the follow-up interviews. A reminder was left at the patient's bed during the morning visit on the day of the interview. When no new information was achieved in subsequent interview, and the caretaker started to give repeatedly the same information, data saturation was assumed and the interview was ended.

"Is there anything that we had not talked about, or that I had not asked that you think I should know?" was the final question posed to each caregiver at the conclusion of the interview. The researcher attempted to schedule the appointment during the day and

included this question as a tactic for the caregivers. During interview memoing, the researcher observed and recorded the caregivers' verbal and nonverbal cues.

3.4.7 Data Analysis Process

Concurrently, the researcher collected and labeled the recorded information with the code number, date, and time. Throughout the study time, the codebook was kept up to date in the research diary. Code definitions and modifications during the study's data gathering and analysis phase were included in the code book section.

The researcher made a verbatim transcription. After transcription, the researcher listened to each tape at least twice to confirm the accuracy of the transcription and then at least once more during follow-up interviews with the participants. First, the researcher verified and explained the details that the caregivers had given throughout the individual in-depth interview and even after transcribing the verbatim was done. The researcher used the *Nvivo* version 10 software to transcribe the verbatim. After transcription, data was analyzed thematically, an approach to finding, examining, and summarizing themes (patterns) in data (Braun & Clarke, 2006; Sharma, 2017). As suggested by Braun and Clarke (2006) in their study, the analysis followed six steps outlined such familiarizing with own data, related to transcribing, reading, and re-reading the objects collected from the participants creating preliminary codes throughout the interview, looking for themes, going over topics, identifying and labeling themes, and creating the report.

Following multiple readings of the transcripts, key themes surfaced and the material was coded. Both discrepancies and recurring themes were discovered in the data. This evolved into a thorough and dynamic comprehension of the significance of the data

(Sharma, 2017). Individual data meaning was saved and reconstituted as codes during theme analysis, after which patterns started to show themselves. Common themes were formed by combining and consolidating patterns. Trustworthiness was established by reading the transcription several times to get a sense of the whole, doing audit trials with field notes, and tape recording. The six steps of thematic qualitative data analysis have been presented as follows.

Step I: Familiarize with data, related to transcribing, reading, and re-reading the narration collected from the participants during the interview. The researcher conducted and transcribed the interviews herself. Researcher listened to the tape and read transcriptions several times along with the notes maintained during the interview and memoing.

Step II: Generating initial codes, refers to the production and collation of the initial element of interest from the entire data set in a basic and systematic way. The researcher worked on this phase by hand and also used Nvivo software to cut out key quotes and pieces of data from the interviews that appeared significant to the study.

Step III: Searching for themes, involved sorting and collating the different codes into potential broader levels of themes. Having captured the initial codes, the researcher sought to put similar codes into categories of theme. Again, the researcher did this by hand and pasted the cutout data segment onto sheets of paper under the relevant themes. In this way, a coded category of data with similar meaning was put under the category of theme.

Step IV: Reviewing themes, whereby the researcher checked all the sub-themes to ensure that they accurately reflected the coded data. All coded data extracts were reviewed to consider whether they appear to form a coherent pattern. In this phase, the researcher again generated themes by collating coherent categories of themes into sub-themes and six different final themes. These categories were reviewed with supervisors to ensure they accurately tell the story from data.

Step V: Defining, naming, and identifies the essence of each theme. Themes were named and renamed throughout the process by themes being joined and collapsed together to become final themes. Sub-themes were generated to tell the story within the final themes.

Step VI: Producing the report, whereby the final analysis of selected extracts is written up telling the story of the data with examples and extracts of the participant's narrative. Extracts are embedded in an analytic narrative and illustrate an argument that is related to the research question. Emerged themes are presented in the thematic map (see Figure 4.2).

Both the qualitative and quantitative results are presented in Chapter IV. The findings of both data sets were discussed separately and then they were triangulated in the discussion section to find out the converging and diverging results.

3.5 Axiological Assumptions

The axiological assumption here is that objectivity is better than subjectivity. However, qualitative study is more subjective than objective. Information on participants' emotions, ideas, frames of reference, and experiences in their own words is deep and rich

when it comes to qualitative research (Yilmaz, 2013; Moroi, 2020). The value-laden nature of the data collected in qualitative research, on the other hand, is disclosed to the study by the researcher, along with their own values and prejudices (Creswell & Poth, 2018). The researcher's role in this study is to do bracketing own feelings, thoughts, frame of reference, and experiences with one word that was avoided to influence the result of qualitative data.

The drawback of QUAL was that results could be skewed by the subjectivity and bias of the researcher. In order to better understand the phenomena of PWB and coping with OHS stress in the patients, this study was carried out using a combination of mixed methods, including QUAN and QUAL approaches (Molina, 2016).

3.6 Ethical Consideration

The Central Department of Psychology's research committee and the Office of the Dean, Faculty of Humanities and Social Science, Kirtipur, approved the project prior to data collection. In order to enable data collection, the Office of the Dean, Faculty of Humanities and Social Science, submitted a written request letter to the Institute of Medicine, Maharajgunj Kathmandu's Institutional Review Committee, which granted ethical clearance. The MCVTC hospital officials granted administrative approval. Before scheduling the interviews for the quantitative section of the study, the researcher determined each day which respondents met the inclusion criteria. The researcher approached the patient one-on-one before scheduling the interview. They described the purpose and nature of the investigation. Participants' anonymity was maintained by not mentioning their names in the questionnaire. Researchers simply gave the code to each questionnaire. Therefore patients were not identified by their name, age, sex, or any other

reasons from the information given by them. To maintain their right to self-determination, consent was taken from the patients for their voluntary participation in the study. A set of informed consent forms is attached in Appendix A (English version) and Appendix D (Nepali version) for QUAN data.

For QUAL portion of a study to maintain confidentiality, the recorded information had access only to the researcher, and if required, to the research advisor without knowing the personal information of the interviewee had access to the information. The date and time for another interview was decided with the participants. The recordings were saved to a personal computer that was password-protected. Voice-recorded information was destroyed upon completion of the dissertation. Caretakers were assured that the findings of the research would be presented in group interpretation, pseudo names would be used, and assured to the participants that the information would be used for the study purpose only and would not be used for other purposes. A set of informed written consent for in-depth interviews is attached in Appendix B (English version) and Appendix E (Nepali version) for qualitative data collection.

It was possible for participants to discontinue their involvement in the study even in the middle time of the interview schedule without asking the reasons for the termination of the participation. The information received from the participants was used for this study purpose only. The filled questionnaire received from them was kept in a locked rack with access only to the researcher. The provided data from the patients and caretakers should be discarded after the study's purpose has been achieved.

3.7 Triangulation of Quantitative and Qualitative of the Study

Based on objectives, triangulation of quantitative and qualitative studies should be needed. Data triangulation was carried out in order to improve the internal validity of study findings and to more thoroughly map out or explain the richness and complexity of human behavior by looking at it from multiple perspectives. In the triangulation process (Meijer et al., 2002; Brown et al., 2015) data collected with the survey method and with in-depth interviews were analyzed independently. Afterward, the researcher related them to each other to find out similarities and disparities between the obtained information (Sharma, 2017). Then these findings were compared with each other and both data sets were combined and discussed along with related literature.

Figure 3.5

Literature-based Triangulation Model

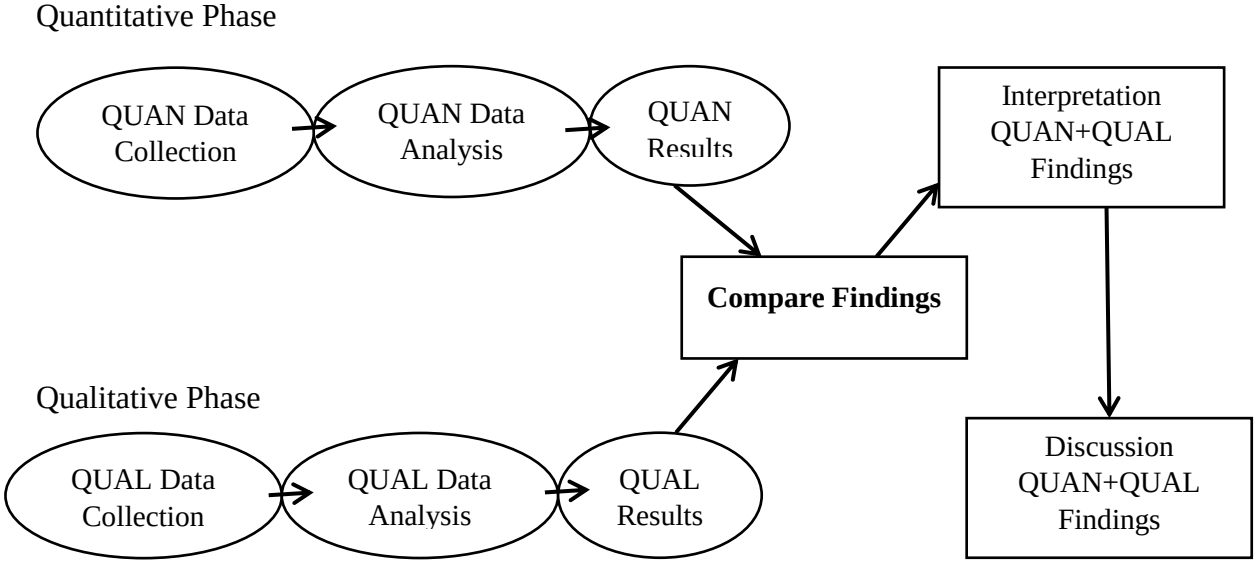


Figure 3.5: Diagrammatic representation of the triangulation model based on literature

Source:- Literature Review

CHAPTER IV

FINDINGS AND INTERPRETATIONS

The findings from the examination of the information gathered from 424 patients who had OHS at MCVTC are shown in this chapter. The table displays the results of the analysis as well as the interpretation. Three sections were used to present the data. The study results of the QUAN data are presented in the first section, followed by the narrative description of the QUAL data in the second section and the triangulated findings in the third.

4.1 Quantitative Study

The quantitative study's conclusions are predicated on the examination and interpretation of data gathered from patients admitted to MCVTC in Maharajgunj, Kathmandu, following OHS with CVDs. The data are analyzed in terms of the objectives of the study and findings are presented in three sections: findings of descriptive statistics, findings of the bivariate analysis, and findings of regression analysis. The findings are displayed in tables from 4.1 to 4.30 and highlights of the table are described in the text.

A descriptive analysis of the variables is included in this section such as frequency, percent, mean, median range, interquartile range, and standard deviation are presented in Table 4.1 to Table 4.28. Table 4.1 describes the demographic characteristics of the OHS patients while Table 4.2 presents the education, daily activity, and payment methods of the health care service. Table 4.3 presents the distribution of reason and frequency of OHS. Tables 4.4 to 4.9 present item-wise frequency, percent, median, and interquartile range of PWB domains. Tables 4.10 to 4.13 present item-wise frequency,

percent, median, and interquartile range of the coping with OHS stress domains of the patients.

Table 4.1

Sociodemographic Characteristics of the Patients with OHS (n=424)

Characteristics	Frequency	Percentage
Sex		
Male	232	54.71
Female	192	45.29
Marital Status		
Married	344	81.13
Unmarried	51	12.03
Widow/Widower	24	5.66
Divorced	5	1.18
Religion		
Hinduism	354	83.49
Buddhism	48	11.32
Islam	13	3.07
Christianity	9	2.12
Living In		
Municipality*	240	56.61
Rural Municipality	184	43.39
Family Type		
Joint	279	65.80
Single	124	29.25
Extended	21	4.95

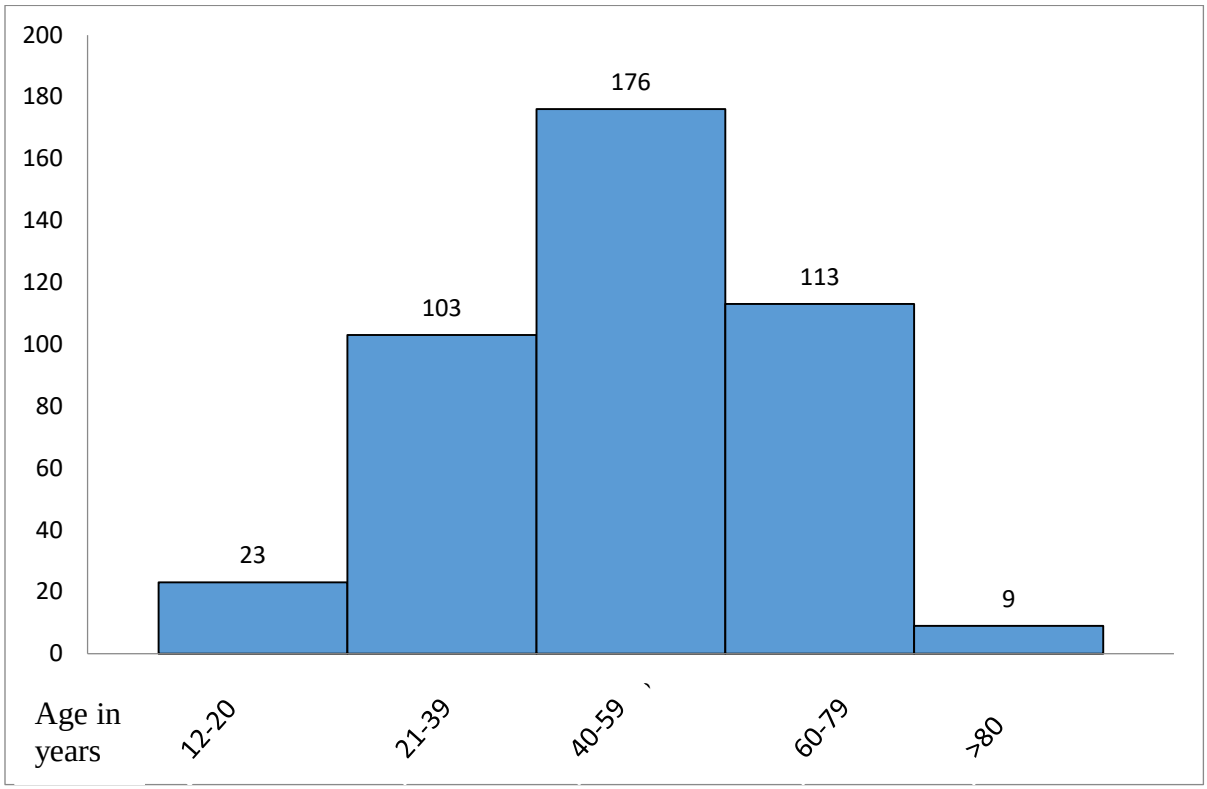
**Municipality: Living in a municipality, metropolitan city, and sub-metropolitan city*

Source:-Field Study 2022/23

Table 4.1 shows that More than half 232 (54.71%) were male patients, more than four-fifths of patients 344 (81.13%) were married, 354 (83.49%) belonged to Hinduism and 240 (56.61%) were from a municipality and 279 (65.80%) were living in a joint family.

Figure 4.1

Age Distribution of the OHS Patients (n=424)



Source:-Field Study 2022/23

Figure 4.1 shows the age distribution of the patients with OHS. The majority of them 176 (41.51%) were from middle age adults which was 40-59 completed years, whereas only 9 (2.12%) of them were more than 80 years. The mean age was 48.76 (±16.93) years.

Table 4.2

Education, Occupation, and Payment Methods of the OHS Patients (n=424)

Variables	Frequency	Percentage
Educational Status		
Formal Education	259	61.08
Can Read and Write	110	25.95
Cannot Read and Write	55	12.97
Formal Education (n=259)		
Primary Level Education	108	41.69
Secondary Level Education	81	31.27
Bachelor Level Education	61	23.56
Master Level and Above	9	3.48
Daily Physical Activities		
Physically Inactive*	246	58.02
Physically Active	178	41.98
Payment Methods		
Out of Pocket	185	43.64
Government Scheme**	165	38.93
Multiple Payment Methods***	74	17.43
Caretakers		
Spouse	275	64.86
Daughter-in-law	70	16.51
Mother	50	11.79
Other****	29	6.84

**Participants who did not engage in physical activity/exercise even 30 minutes a day: **RHDF/CAP/SCP: ***Bipanna+Freebed+Jayanti trust+HI: ****Daughter, Son, Sister, Brother, Grandchild, & Disciple Source:-Field Study 2022/23*

Table 4.2 reveals, 259 (61.08%) attend the formal education system, and among these, 108 (41.69%) of the patients with OHS completed primary education. Two hundreds fourty six (58.02%) of the patients were from the physically inactive group, who didn't perform any exercise nor engage in physically active daily living activities even for 30 minutes per day. Nearly, two-thirds of the patient's caretaker was the spouse.

Table 4.3

Reason and Frequency of OHS of the Patients (n=424)

Variables	Number	Percentage
Reason to do OHS(n=424)		
Coronary Artery Diseases (CAD)	164	38.68
Valvular Diseases	157	37.03
Congenital Heart Diseases	81	19.10
Combo. Diseases*	22	5.19
Frequency of Valvular Disease Operation (n=157)		
First-time operation	138	87.89
Redo-operation	19	12.11

**Combination of Coronary Artery Diseases+Valvular diseases/ Coronary Artery Diseases+Aortic Problem*

Source:-Field Study 2022/23

Table 4.3 displays, CAD 164 (38.68%) as a reason for OHS, followed by valvular heart diseases, congenital heart diseases, and other multiple heart diseases. Likewise, 138 (87.89%) of valvular operation was conducted the first time, whereas 19 (12.11%) of the valve operation was done for the second time.

Table 4.4

OHS Patient's Responses on PWB Scale: Autonomy (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people	33 (7.78)	37 (8.72)	70 (16.50)	59 (13.91)	44 (10.38)	74 (17.45)	107 (25.23)	5	3-7
I tend to worry about what other people think of me	44 (10.38)	70 (16.50)	71 (16.74)	78 (18.40)	63 (14.86)	55 (12.98)	43 (10.14)	4	2-5
My decisions are not usually influenced by what everyone else is doing	41 (9.67)	63 (14.86)	72 (16.98)	72 (16.98)	69 (16.27)	49 (11.56)	58 (13.68)	4	3-6
I judge myself by what I think is important, not by the values of what others think is important	27 (6.37)	58 (13.68)	73 (17.21)	72 (16.98)	70 (16.50)	68 (16.04)	56 (13.21)	4	3-6
I tend to be influenced by people with strong opinions	60 (14.15)	59 (13.91)	73 (17.21)	85 (20.05)	60 (14.15)	55 (12.98)	32 (7.55)	4	2-5
I have confidence in my opinions, even if they are contrary to the consensus	51 (12.03)	62 (14.62)	65 (15.33)	80 (18.87)	66 (15.57)	47 (11.08)	53 (12.50)	4	2-5
It's difficult for me to voice my own opinions on the controversial matter	58 (13.68)	72 (16.98)	69 (16.27)	64 (15.09)	63 (14.86)	48 (11.32)	50 (11.79)	4	2-5

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.4 shows that patients with OHS responses to items from the autonomy domain, median, and interquartile range. The majority of patients with OHS responded undecided on all items of the autonomy domain. Eighty-five (20.05%) of the patients said undecided about the item "I tend to be influenced by people with strong opinions"

Whereas, 107 (25.23%) said strongly agree with an item "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people".

Table 4.5

OHS Patient's Responses on PWB Scale: Environmental Mastery (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
In general, I feel I am in charge of the situation in which I live.	39 (9.20)	64 (15.09)	68 (16.04)	69 (16.27)	80 (18.87)	59 (13.92)	45 (10.61)	4	3-5
I have difficulty arranging my life in a way that is satisfying to me	51 (12.02)	62 (14.62)	74 (17.45)	92 (21.20)	67 (15.80)	45 (10.61)	33 (7.78)	4	2-5
The demands of everyday life often get me down	58 (13.68)	82 (19.34)	66 (15.57)	76 (17.92)	69 (16.27)	42 (9.91)	31 (7.31)	4	2-5
I have been able to build a living environment and a lifestyle for myself that is much to my liking	48 (11.32)	61 (14.39)	66 (15.57)	69 (16.27)	72 (16.98)	49 (11.56)	59 (13.92)	4	2-6
I do not fit very well with the people and the community around me	37 (8.73)	51 (12.02)	73 (17.21)	81 (19.10)	81 (19.10)	54 (12.73)	47 (11.08)	4	3-5
I am quite good at managing the many responsibilities of my daily life	43 (10.14)	65 (15.33)	76 (17.92)	79 (18.63)	58 (13.68)	49 (11.56)	54 (12.73)	4	2-5
I often feel overwhelmed by my responsibilities	61 (14.39)	61 (14.39)	63 (14.86)	66 (15.57)	59 (13.92)	53 (12.50)	61 (14.39)	4	2-6

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.5 shows the patient's responses to items from the environmental mastery domain, median, and interquartile range. The majority of patients responded undecided on items "I have difficulty arranging my life in a way that is satisfying to me", "I do not

fit very well with the people and the community around me", "I am quite good at managing the many responsibilities of my daily life", and "I often feel overwhelmed by my responsibilities" of environmental mastery domain. Whereas 80 (18.87%) of the patients somehow agree with the item "In general, I feel I am in charge of the situation in which I live".

Table 4.6

OHS Patient's Responses on PWB: Personal Growth (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
For me, life has been a continuous process of learning, changing, and growth	32 (7.55)	27 (6.37)	79 (18.63)	52 (12.26)	80 (18.87)	90 (21.22)	64 (15.09)	5	3-6
I am not interested in activities that will expand my horizons	38 (8.96)	61 (14.39)	57 (13.44)	80 (18.87)	70 (16.51)	63 (14.86)	55 (12.97)	4	3-6
I gave up trying to make big improvements or changes in my life a long time ago	48 (10.61)	65 (15.33)	69 (16.27)	83 (19.57)	79 (18.63)	41 (9.67)	39 (9.19)	4	2-5
I think it is important to have new experiences that challenge how you think about yourself and the world	38 (8.96)	56 (13.21)	61 (14.39)	72 (16.98)	74 (17.45)	51 (12.03)	72 (16.98)	4	3-6
I do not enjoy being in new situations that require me to change my old familiar ways of doing things	63 (14.86)	63 (14.86)	66 (15.57)	75 (17.69)	69 (16.27)	44 (10.38)	44 (10.38)	4	2-5
When I think about it, I haven't improved much as a person over the years	44 (10.38)	65 (15.33)	70 (16.51)	76 (17.92)	71 (16.75)	52 (12.26)	46 (10.85)	4	2-5
I have the sense that I have developed a lot as a person over time	48 (11.32)	62 (14.62)	69 (16.27)	78 (18.40)	68 (16.04)	42 (9.91)	57 (13.44)	4	2-5

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.6 shows the patient's responses on items from the personal growth domain, median, and interquartile range. The majority of patients responded undecided in almost all items of the personal growth domain. Ninty (21.22%) of the patients agreed with the item "For me, life has been a continuous process of learning, changing, and growth"

Table 4.7

OHS Patient's Responses on PWB Scale: Positive Relations (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
People would describe me as a giving person, willing to share my time with others	41 (9.76)	53 (12.50)	65 (15.33)	79 (18.63)	78 (18.40)	47 (11.08)	61 (14.39)	4	3-6
Most people see me as loving and affectionate	32 (7.55)	39 (9.20)	70 (16.51)	92 (21.70)	62 (14.62)	51 (12.02)	78 (18.40)	4	3-6
I have not experienced many warm and trusting relationships with others	42 (9.91)	59 (13.92)	62 (14.62)	86 (20.28)	62 (14.62)	52 (12.26)	61 (14.39)	4	3-6
Maintaining close relationships has been difficult and frustrating for me	53 (12.50)	50 (11.79)	78 (18.40)	82 (19.34)	57 (13.44)	51 (12.02)	53 (12.50)	4	3-5
I know that I can trust my friends, and they know they can trust me	47 (11.08)	69 (16.27)	70 (16.51)	75 (17.69)	51 (12.02)	51 (12.02)	61 (14.39)	4	2-6
I often feel lonely because I have few close friends with whom to share my concerns	63 (14.86)	59 (13.92)	72 (16.98)	65 (15.33)	66 (15.57)	64 (15.09)	35 (8.25)	4	2-5
I enjoy personal and mutual conversations with family members and friends	43 (10.14)	59 (13.92)	66 (15.57)	71 (16.74)	68 (16.04)	58 (13.68)	59 (13.92)	4	3-6

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.7 reveals the patient's response on items from positive relations with other domains, median and interquartile range. The majority of patients responded undecided in almost all items of the positive relation's domain.

Table 4.8

OHS Patient's Responses on Psychological Well-being Scale: Purpose in Life (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
I enjoy making plans for the future and working to make them a reality	40 (9.43)	42 (9.91)	75 (17.69)	88 (20.75)	72 (16.98)	53 (12.50)	54 (12.73)	4	3-6
I live life one day at a time and don't think about the future	49 (11.56)	62 (14.62)	74 (17.45)	83 (19.57)	89 (20.99)	40 (9.43)	27 (6.37)	4	2-5
I have a sense of direction and purpose in life	34 (8.02)	53 (12.50)	71 (16.74)	81 (19.10)	71 (16.74)	65 (15.33)	49 (11.56)	4	3-6
Some people wander aimlessly through life, but I am not one of them	42 (9.91)	47 (11.08)	67 (15.80)	90 (21.23)	71 (16.74)	50 (11.79)	57 (13.44)	4	3-6
I don't have a good sense of what it is I'm trying to accomplish in life	51 (12.03)	63 (14.86)	89 (20.99)	86 (20.28)	61 (14.39)	48 (11.32)	26 (6.13)	4	2-5
I sometimes feel as if I've done all there is to do in life	60 (14.15)	70 (16.51)	75 (17.69)	75 (17.69)	63 (14.86)	49 (11.56)	32 (7.55)	4	2-5
My daily activities often seem trivial and unimportant to me	50 (11.79)	58 (13.68)	68 (16.04)	79 (18.63)	77 (18.16)	42 (9.91)	50 (11.79)	4	2-5

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.8 displays the patient's responses on items from purpose in life domain, median, and interquartile range. The majority of responses were mixed from somehow disagree to somehow agree in purpose in life domain.

Table 4.9

OHS Patient's Responses on PWB Scale: Self-acceptance (n=424)

Items	Responses								
	1	**2**	**3**	**4**	**5**	**6**	**7**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q_1-Q_3**
In many ways, I feel disappointed about my achievements in life	44 (10.38)	64 (15.09)	76 (17.92)	83 (19.58)	69 (16.27)	53 (12.50)	35 (8.25)	4	2-5
When I look at the story of my life, I am pleased with how things have turned out	36 (8.49)	54 (12.73)	56 (13.21)	78 (18.40)	93 (21.93)	46 (10.85)	61 (14.39)	4	3-6
My attitude about myself is probably not as positive as most people feel about themselves	34 (8.02)	78 (18.40)	66 (15.57)	79 (18.63)	69 (16.27)	57 (13.44)	41 (9.67)	4	2-5
In general, I feel confident and positive about myself	27 (6.37)	62 (14.62)	70 (16.51)	76 (17.92)	69 (16.27)	64 (15.09)	56 (13.21)	4	3-6
When I compare myself to friends and acquaintances, it makes me feel good about who I am	35 (8.25)	74 (17.45)	65 (15.33)	74 (17.45)	73 (17.21)	44 (10.38)	59 (13.91)	4	2-5
I feel like many of the people I know have gotten more out of life than I have	58 (13.68)	74 (17.45)	71 (16.75)	66 (15.57)	74 (17.45)	46 (10.85)	35 (8.25)	4	2-5
I like most parts of my personality	48 (11.32)	58 (13.68)	71 (16.75)	70 (16.51)	62 (14.62)	48 (11.32)	67 (15.80)	4	2.2-6

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree, M: Median

Source:-Field Study 2022/23

Table 4.9 shows, the patient's responses to items from self-acceptance in the PWB domain, median, and interquartile range. The majority of patients' responses range from disagreeing to somehow agreeing in the self-acceptance domain.

Table 4.10

Patient's Responses on Coping with OHS Stress: Reflection (n=424)

Items	Responses					
	1	**2**	**3**	**4**		
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**	**M**	**Q1-Q3**
If the open heart surgery is not successful, I imagine my life will be over.	63 (14.86)	184 (43.40)	129 (30.42)	48 (11.32)	2	2-3
I wonder about the possible complication of open heart surgery.	16 (3.77)	125 (29.48)	188 (44.34)	95 (22.41)	3	2-4
I consider my friends' negative experiences with open heart surgery	59 (13.92)	89 (21.00)	145 (34.20)	131 (30.90)	3	2-4
I try to think of everything about open heart surgery.	26 (6.13)	97 (22.88)	179 (42.22)	122 (28.77)	3	2-4

1: Never, 2: Sometime, 3: Always, 4: Almost all time, M: Median, Q1: First quartile, Q: Third quartile

Source:- Field Study 2022/23

Table 4.10 displays the patient's response to items from coping with OHS stress of the reflection domain, median, and interquartile range. Where, the highest responses were on 'always' in three items of reflection 188 (44.34%), 179 (42.22%), and 145 (34.20%). Whereas 184 (43.40%) of the patients responded 'sometimes' in the item "If the open heart surgery is not successful, I imagine my life will be over".

Table 4.11

Patient's Responses on Coping with OHS Stress: Belief and Support (n=424)

Items	Responses					
	1	2	3	4		
	No. (%)	No. (%)	No. (%)	No. (%)	M	Q1-Q3
I reassure myself that I trust the doctors and nurses who examine me and perform open heart surgery.	22 (5.19)	94 (22.17)	171 (40.33)	137 (32.31)	3	2-4
I reassure myself that everything will be fine after the open heart surgery.	25 (5.89)	102 (24.06)	169 (39.86)	128 (30.19)	3	2-4
I try to see the positive side of open heart surgery.	30 (7.08)	86 (20.28)	160 (37.73)	148 (34.90)	3	2-4
I reflect on the support I'm getting for the open heart surgery in the hospital.	32 (7.55)	90 (21.23)	147 (34.67)	155 (36.55)	3	2-4
I chat to people in an effort to boost my confidence.	26 (6.13)	67 (15.80)	137 (32.31)	194 (45.75)	3	3-4
I hope for the comfort and support of the family regarding my treatment	21 (4.95)	73 (17.22)	123 (29.01)	207 (48.82)	2	1-3

1: Never, 2: Sometime, 3: Always, 4: Almost all time, M: Median, Q1: First quartile, Q: Third quartile

Source:- Field Study 2022/23

Table 4.11 displays the patient's responses to items from coping with OHS stress of belief and support domain, median, and interquartile range. Where, highest responses were on 'always' in three items of believe and support 171 (40.3%), 169 (39.9%), and 160 (37.7%). Whereas 207 (48.82%), 194 (45.75%), and 155 (36.55%) of the patients responded 'almost always' in the items "I hope for the comfort and support of the family regarding my treatment", I chat to people in an effort to boost my confidence.", and "I reflect on the support I'm getting for the open heart surgery in the hospital" respectively.

Table 4.12

Patient Responses on Coping with OHS Stress: Reassurance and Religious (n=424)

Items	Responses					
	1 No. (%)	2 No. (%)	3 No. (%)	4 No. (%)	M	Q1-Q3
I discuss open heart surgery with friends who are medical professionals.	50 (11.79)	117 (27.59)	165 (38.92)	92 (21.70)	3	2-3
I tell myself, I'm not in the worse situation as others.	68 (16.04)	111 (26.18)	146 (34.43)	99 (23.35)	3	2-3
I remind myself that I have faced much more stressful situations before.	140 (33.02)	113 (26.65)	84 (19.81)	87 (20.52)	2	1-3
I read books and magazines about heart disease and treatment	205 (48.35)	98 (23.11)	72 (16.98)	49 (11.56)	2	1-3
I believe in God and praying	5 (1.18)	59 (13.92)	97 (22.88)	263 (62.02)	4	3-4

1: Never, 2: Sometime, 3: Always, 4: Almost all time, M: Median, Q1: First quartile, Q: Third quartile

Source:- Field Study 2022/23

Table 4.12 displays the patient's response to items from coping with OHS stress of reassurance domain, median, and interquartile range. Where highest responses were on 'always' in items "I discuss open heart surgery with friends who are medical professionals" was 165 (38.92%), and "I tell myself, I'm not in the worse situation as others." was 146 (34.43%) of the reassurance domain. Whereas, 205 (48.35%) and 140 (33.02%) of the patients responded, 'never' in the items "I read books and magazines about heart disease and treatment" and "I remind myself that I have faced much more stressful situations before." respectively. Likewise in the religious item, 263 (62.02%) of patients responded almost always item "I believe in God and praying"

Table 4.13

Patient Responses on Coping with OHS Stress: Accepting (n=424)

Items	Responses					
	1	2	3	4		
	No. (%)	No. (%)	No. (%)	No. (%)	M	Q1-Q3
I informed myself about all the advantages and disadvantages of the open heart surgery.	72 (16.98)	128 (30.19)	132 (31.13)	92 (21.70)	3	2-3
I have a lot of questions for the doctors regarding open heart surgery.	147 (34.67)	128 (30.19)	97 (22.88)	52 (12.26)	2	1-3
I tell myself that some individual have had successful open heart surgery.	77 (18.16)	108 (25.47)	137 (32.31)	102 (24.06)	3	2-3
I remind myself that others are facing the same problems as me.	60 (14.15)	164 (38.68)	107 (25.24)	93 (21.93)	2	2-3
I sleep a lot even after open heart surgery.	130 (30.66)	123 (29.01)	107 (25.24)	64 (15.09)	2	1-3

1: Never, 2: Sometime, 3: Always, 4: Almost all time, M: Median, Q1: First quartile, Q: Third quartile

Source:- Field Study 2022/23

Table 4.13 displays the patient's response to items from coping with the OHS stress of accepting domain, median, and interquartile range. Where highest responses 132 (31.13%) were on 'always ' in item "I inform myself about all advantages and disadvantages of the open heart surgery", and 137 (32.31%) in item "I tell myself that some individual have had successful open heart surgery.l" of accepting. Whereas, 164 (38.68%) of the patients responded "sometimes' in item "I remind myself that others are facing the same problems as me.", and 147 (34.67%) of patients responded 'never' in the item "I have a lot of questions for the doctors regarding open heart surgery".

4.1.1 Status of Psychological Well-being and Coping with OHS Stress

Tables 4.14, and 4.16 present PWB and coping with OHS stress scores and the status of the patients with OHS. Tables 4.17, 4.18, and 4.19 present the hemodynamic status, physical appearance, and physical build-up of the patients with OHS.

Table 4.14

PWB and Coping Scores of Patients with OHS (n=424)

Domains	Actual Data Score Min. – Max.	Obtained Score Mean ± SD
Psychological Well-being	**81-271**	**168.40±36.24**
Domains		
Autonomy	13-48	28.35 ±7.17
Environmental mastery	10-49	27.50 ±7.13
Personal growth	12-49	28.49 ±7.33
Positive relation with other	10-49	28.46 ±7.67
Purpose in life	11-45	27.52 ±6.73
Self-acceptance	10-45	28.09 ±7.12
Coping with OHS Stress	**20-74**	**54.47±9.52**
Domains		
Reflection	4-16	10.99 ±2.73
Belief and Support	6-24	18.34 ±3.70
Religious	1-4	3.46 ± 0.77
Reassurance	4-16	9.55 ± 2.65
Acceptance	5-20	12.12 ± 3.27

Source:- Field Study 2022/23

Table 4.14 shows the possible and obtained scores of PWB and coping with OHS stress in detail, where the mean scores of the patients were highest (27.50 ±7.13) in the

environmental mastery of the psychological domains. Similarly, in coping domains belief and support had higher scores (18.34 ± 3.70), based on predetermined possible scores.

Table 4.15

PWB Status of the Patients with OHS (n=424)

Scale and Domains	PWB		Cut off Point
	Low*	High**	
	No. (%)	No. (%)	
Psychological Well-being	118 (27.83)	306 (72.17)	147
Domains			
Autonomy	136 (32.07)	288 (67.93)	
Environmental Mastery	147 (34.67)	277 (65.33)	
Personal Growth	131 (30.89)	293 (69.11)	24.5
Positive Relations with Other	143 (33.73)	281 (66.27)	
Purpose in Life	149 (35.14)	275 (64.86)	
Self-acceptance	149(35.14)	275 (64.86)	

**Those obtained score < cut off point, ** Those obtained score ≥cut off point*
Source:- Field Study 2022/23

Table 4.15, describes the status of the PWB of OHS patients. 306 (72.17%) patients had high PWB. In the personal growth domain, 293 (69.11%) of the patients had high PWB, followed by autonomy 288 (67.93%), and positive relation with other 281 (66.27%).

Table 4.16

Coping with OHS Stress Status of the Patients (n=424)

Scale and Domains	Ineffective Coping	Moderate Coping	Effective Coping
Coping with OHS Stress	40 (9.43)	266(62.73)	118 (27.83)
Domains/Strategies			
Reflection	80(18.87)	194 (45.75)	150(35.38)
Belief and support	40 (9.43)	140 (33.01)	244(57.55)
Acceptance	131 (30.89)	230(54.25)	63(14.86)
Reassurance	168 (39.62)	189 (44.58)	67(15.80)
Religious	64 (15.09)	97 (22.88)	263(62.02)

Source:- Field Study

Table 4.16, presented the coping and strategies with OHS stress status of the patients in three categories; ineffective coping, moderate coping, and effective coping. 266 (62.73%) of the OHS patients had moderate coping skills to cope with surgical stress, followed by 118 (27.83%) had effective coping skills, and 40 (9.43%) of the patients had ineffective coping skills.

Regarding the domain or strategies, 263 (62.02%) of the patients had fate on god and praying being a religious followed by 244 (57.55%) of patients who used belief and support, and 150 (35.38%) of them used reflection as an effective coping skill. Similarly, 230 (54.25%) of OHS patients had used acceptance, followed by 194 (45.75%) used reflection, 189 (44.58%) used reassurance, and 140 (33.01%) used belief and support as a moderate coping skill. However, 168 (39.62%) of them used reassurance, followed by 131 (30.89%) had used acceptance as an ineffective coping skill.

Table 4.17

Hemodynamic Status (Physical Health) of the OHS Patients (n =424)

Variables	No. (%)
Vital Signs	
Normal with Inotropes	204 (48.11)
Normal without Inotropes	220 (51.89)
Blood Pressure	
Normotensive	411 (96.93)
Hypertensive	7 (1.65)
Hypotensive	6 (1.42)
Pulse Rate	
Normal	413 (97.40)
Bradycardia	6 (1.42)
Tachycardia	5 (1.18)
Respiratory Rate	
Normal	417 (98.35)
Bradypnea	5 (1.18)
Tachypnea	2 (0.47)
Body Temperature	
Normal	408 (96.23)
Hypothermia	12 (2.83)
Hyperthermia	4 (0.94)
Pain	
No pain	300 (70.75)
Mild pain	78 (18.39)
Moderate pain	40 (9.44)
Severe pain	6 (1.42)
Oxygen Saturation	
>95%	384 (90.57)
90-94%	37 (8.72)
<89%	3 (0.71)

Source:- Field Study 2022/23

As displayed in Table 4.17, 220 (51.89%) of the patient's vital signs were normal without the need for giving any inotropes at the time of the interview. The majority of all OHS patient's blood pressure, pulse rate, respiratory rate, body temperature, and saturation were normal. However, 124 (29.25%) experienced mild to severe incisional pain while interviewing the patient.

Table 4.18

Physical Appearances of the OHS Patients Based on Mini-Mental Status Examination (n =424)

Variables	No. (%)
General Appearance	
Normal	423 (99.76)
Abnormal	1 (0.24)
Facial Expression	
Anxious	297 (70.05)
Confident	57 (13.44)
Pleasant	44 (10.38)
Normal	26 (6.13)
Body Posture	
Guarded	389 (91.75)
Stiff	29 (6.83)
Normal	6 (1.42)
Rapport Build	
Easily build	419 (98.82)
Difficult to build	5 (1.18)

Source:- Field Study 2022/23

As displayed in Table 4.18, the general appearance of almost all patients with OHS was normal. Whereas, 297 (70.05%) of the patient's facial expression was anxious, and 389 (91.75%) of the patient's body posture was guarded (protect operative incision).

Table 4.19

Physical Built-up of the OHS Patients (n =424)

Variables	No. (%)
Physical built-up	
According to Weight*	
Under-weight	160 (37.73)
Over-weight**	133 (31.37)
Normal Weight	131 (30.90)
According to Age***	
Age Appropriate	248 (58.49)
Older for Age	122 (28.77)
Younger for Age	54 (12.74)

**objective data: **overweight and obese were merged as overweight: ***Subjective data (observation)*

Source: - Field Study 2022/23

In Table 4.19, OHS patients' physical build-up according to weight and age of OHS patients was presented. The categories of underweight, overweight, and normal weight were based upon the criteria of body mass index calculation referring to the formula (BMI= weight in kg/height in meter squared). One hundred and sixty (37.73%) patients with OHS were underweight, followed by 133 (31.37%) were overweight, and 131 (30.90%) were normal weight, these were objective data. Whereas, based on observation 248 (58.49%) of patients with OHS looked appropriate to their age, followed by 122 (28.77%) who looked older for age, and only 54 (12.74%) looked younger for their chronological age.

4.1.2 Association of Dependent and Independent Variables

This portion of the study findings presents inferential statistics, which was applied to calculate the p-value. In order to determine how the dependent and independent

variables are related, the chi-square test was used. Findings of association among variables are presented in Table 4.20 to Table 4.23. Tables 4.20 and 4.21 present the association between PWB and coping with OHS stress with socio-demographic characteristics of the OHS patients respectively. Table 4.22 presents the association between PWB and hemodynamic & physics of OHS patients. Table 4.23 presents the association between coping with OHS stress and hemodynamics & physique of OHS patients.

Table 4.20

Association between PWB and Socio-demographic Characteristics of OHS Patients x^2 Test (n=424)

Variables	PWB		Total	P value	OR (CI)
	High No. (%)	Low No. (%)	No.		Lower-Upper
Age					
<48 years	139 (70.20)	59 (29.80)	198	0.397	1.201 (0.785 -1..838)
≥49 years	167(73.89)	59 (26.11)	226		
Sex					
Female	122 (63.54)	70 (36.46)	192	<0.001**	2.199 (1.427 -3.390)
Male	184 (79.31)	48 (20.69)	232		
Marital Status					
Singlehood	58 (72.50)	22(27.50)	80	0.942	0.980 (0.569 - 1.689)
Married	248 (72.09)	96 (27.91)	344		
Living Location					
Municipality*	185 (77.08)	55(22.92)	240	0.010**	1.751 (1.141 - 2.688)
Rural Municipality	121 (65.76)	63(34.24)	184		
Educational Status					
Literate***	112 (67.87)	53(32.13)	165	0.101	1.434 (0.931 - 2.209)
Formal Education	194 (75.19)	64 (24.81)	258		
Daily Physical Activities					
Physically Inactive[#]	177 (71.95)	69 (28.05)	246	0.906	0.974 (0.633 - 1.499)
Physically Active	129 (72.47)	49 (27.53)	178		

**Municipality(municipality+submetrpolitan+metropolitan), ** significant p-value at < 0.05, ***literate and illiterate, [#] Participants who did not engage in physical activity/exercises even 30 minutes a day, OR: Odds Ratio, CI: Confident Interval*

Source:- Field Study 2022/2023

Table 4.20 shows the association of socio-demographic variables and PWB with Pearson chi-square (x^2) calculation. The sex and living location of the patients had a significant association with PWB. The odds ratio of male sex (2.199) and living in the municipality (1.751) was significant statistically.

Table 4.21

Association between Coping with OHS Stress and Socio-demographic Characteristics x^2 Test (n=424)

Variables	Coping Skill		Total	P value	OR (CI)
	Effective* No. (%)	Ineffective No. (%)	No.		Lower-Upper
Age					
<48 years	176(88.9)	22(11.1)	198	0.269	1.444 (0.751 -2..779)
≥49 years	208(92.0)	18 (8.0)	226		
Sex					
Male	212 (91.4)	20 (8.6)	232	0.529	1.233 (0.642 -2.365)
Female	172 (89.6)	20 (10.4)	192		
Marital Status					
Married	317 (92.2)	27 (7.8)	344	0.021**	2.278 (1.118 - 4.644)
Singlehood	67 (83.8)	13(16.3)	80		
Living Location					
Municipality***	223 (92.9)	17(7.1)	240	0.059	0.534 (0.276 -1.031)
Rural Municipality	161 (87.5)	23(12.5)	184		
Educational Status					
Formal Education	236 (91.5)	22(8.5)	258	0.426	1.305 (0.677 - 2.514)
Literate****	148 (89.2)	18(10.8)	165		
Daily Physical Activity					
Physically Inactive#	225 (91.5)	21 (8.5)	246	0.457	1.280 (0.666 - 2.460)
Physically Active	159 (89.3)	19 (10.7)	178		

**Effective coping skill(moderate+effective coping skill), **Significant p- value at < 0.05, ***Municipality(municipality+submetrpolitan+metropolitan, ****literate and illiterate, # Participants who did not engage in physical activity/exercises even 30 minutes a day, OR: Odds Ratio, CI:Confident Interval*

Source:- Field Study 2022/2023

Table 4.21 shows the association of socio-demographic variables and coping with OHS stress with Pearson chi-square (x^2) calculation. The marital status of the OHS

patients had a significant association with coping with surgical stress at <0.05 level of significance. The odds ratio of married (2.278) was significant statistically.

Table 4.22

Association between PWB and Hemodynamic and Physical Characteristics x^2 Test (n=424)

Variables	PWB		Total No.	P value	OR (CI) Lower-Upper
	High*** No. (%)	Low* No. (%)			
Vital Signs					
Normal without Inotropes	156(70.90)	64 (29.10)	220	0.547	0.878 (0.573 -1.343)
Normal with Inotropes	150 (73.53)	54 (26.47)	204		
Pain					
No Pain	194 (64.67)	106 (35.33)	300	<0.001**	5.102 (2.688 - 9.708)
Pain	112 (90.32)	12 (9.68)	124		
Oxygen Saturation					
≥ 95 %	275 (71.61)	109 (28.39)	384	0.429	1.365 (0.629 -2.962)
< 94 %	31 (77.50)	9 (22.50)	40		
Physical Built-up					
According to Body Weight					
Abnormal Weight	218 (74.40)	75 (25.60)	293	0.125	1.420 (0.906 - 2.226)
Normal Weight	88 (67.18)	43(32.82)	131		
According to Age					
Age Appropriate	168 (67.74)	80 (32.26)	248	0.016**	1.729 (1.106 - 2.704)
No Age Appropriate	138 (78.41)	38 (21.59)	176		

Those obtained score < cut off point, ** Significant p-value at < 0.05, * those obtained score ≥cut off poin, OR: Odds Ratio, CI:Confident Interval*

Source:- Field Study 2022/23

Table 4.22 shows the association of hemodynamic and physical characteristics and psychological well-being with Pearson's chi-square (x^2) calculation. The incisional pain and physical build-up based on the appropriate age of the OHS patients had a

significant association with psychological well-being. The odds ratio of pain (5.102) and physical build-up according to age (1.729) was significant statistically.

Table 4.23

Association between Coping with OHS Stress and Hemodynamic and Physical Characteristics x^2 Test (n=424)

Variables	Coping Skill		Total	P value	OR (CI)
	Effective* No. (%)	Ineffective No. (%)	No.		Lower-Upper
Vital Signs					
Normal without Inotropes	192(87.3)	28 (12.7)	220	0.016**	2.331 (1.125 -4.716)
Normal with Inotropes	192(94.1)	12 (5.9)	204		
Pain					
No Pain	275 (91.7)	25 (8.3)	300	0.228	1.514 (0.769 -2.980)
Pain	109 (87.9)	15 (12.1)	124		
Oxygen Saturation					
≥ 95 %	348 (90.6)	36 (27.5)	384	>0.999$^{€}$	0.931 (0.314 - 2.765)
< 94 %	36 (90.0)	4 (10.0)	40		
Physical Built-up					
According to Body Weight					
Normal weight	260 (88.7)	33 (11.3)	293	0.054	0.445 (0.191 - 1.034)
Abnormal weight	124 (94.7)	7 (5.3)	131		
According to Age					
Age appropriate	224 (90.3)	24 (9.7)	248	0.839	1.071 (0.551 - 2.082)
No age appropriate	160 (90.9)	16 (9.1)	176		

**Effective coping skill(moderate+effective coping skill), **Significant p-value at < 0.05, OR: Odds Ratio, CI:Confident Interval, $^{€}$continuity correction*

Source:- Field Study 2022/23

Table 4.23 shows the association between hemodynamic and physical build-up characteristics and coping with surgical stress skill using Pearson chi-square (x^2) calculation. The vital signs of the OHS patients had a significant association with coping with surgical stress. The odds ratio of vital signs (2.331) was significant statistically.

4.1.3 Relationship between PWB and Coping with OHS Stress

By assessing the r-value using the Pearson correlation and Spearman correlation tests, respectively, the association between PWB and the patients' ability to cope with OHS stress was confirmed. The association between PWB and OHS stress coping techniques and domains is shown in Table 4.24. Similarly, the association between PWB within their domains and coping with OHS stress is seen in table 4.25.

Table 4.24

Relationship between PWB and Coping with OHS Stress Including their Domains (n=424)

	PWB	**CSS**	**R**	**BS**	**Rel.**	**Reas.**	**A**
PWB	1						
Coping with OHS Stress	.077	1					
	.115						
Reflection (R)	.053	.623**	1				
	.274	.000					
Belief and Support (BS)	.012	.722**	.383**	1			
	.801	.000	.000				
Religious (Rel.)	.123*	.348**	.125**	.360**	1		
	.011	.000	.010	.000			
Reassurance (Reas.)	.000	.655**	.230**	.270**	.050	1	
	.999	.000	.000	.000	.301		
Acceptance	.113*	.816**	.331**	.446**	.230**	.522**	1
	.020	.000	.000	.000	.000	.000	

** Correlation is significant at the 0.05 level (2-tailed):** Correlation is significant at the 0.01 level (2-tailed)*

Spearman's correlation (r)

Source:- Field Study 2022/23

Table 4.24 displays Spearman's correlation between PWB and coping with OHS stress including coping domains. There was no correlation between PWB and coping

with OHS stress. However, coping strategies religious (r=0.123) and acceptance (r=0.113) had a weak correlation with PWB at <0.05 level of significance. There was also no correlation between reassurance and religious coping strategies. There was a strong relationship between reflection(r=0.623), belief and support (r=0.722), reassurance (r=655), and acceptance (r=816) to coping with OHS stress, however religious (r=0.348) has moderate relation at <0.01 level of significance.

Table 4.25

Relationship between Coping with OHS Stress and PWB Domains (n=424)

	COS	**PWB**	**A**	**EM**	**PG**	**PR**	**PL**	**SA**
COS	1							
PWB	.071	1						
	.146							
Autonomy (A)	.102*	.840**	1					
	.035	.000						
Environmental	.042	.827**	.623**	1				
Mastery (EM)	.393	.000	.000					
Personal Growth	.011	.852**	.658**	.627*	1			
(PG)	.815	.000	.000	.000				
Positive Relation	.054	.847**	.625**	.643**	.691**	1		
(PR)	.264	.000	.000	.000	.000			
Purpose in Life	.074	.841**	.684**	.661**	.683**	.614**	1	
(PL)	.128	.000	.000	.000	.000	.000		
Self-acceptance	.074	.829**	.646**	.617**	.625**	.669**	.621**	1
(SA)	.126	.000	.000	.000	.000	.000	.000	

** Correlation is significant at the 0.05 level(2-tailed): **Correlation is significant at the 0.01 level (2-tailed) Pearson correlations (r)*

Source:- Field Study 2022/23

The association between the PWB domain and managing OHS stress is shown in Table 4.25. At the 0.05 level of significance, there was a slight connection (r=0.102) between the autonomy domain of PWB of OHS patients and their ability to cope with postoperative stress. However, PWB and its three remaining domains—environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance—do not correlate with coping with postoperative stress.

4.1.4 Predictors of Psychological Well-being

Linear regression model, by enter methods, was constructed to (a) examine the contribution of each independent variable (hemodynamic variables, and physical characteristics) to the value of dependent variables of PWB with controlled variables (socio-demographic variables), (b) determine which independent predictor has the greatest impact on the dependent variable, and (c) determine the total amount of variance in the dependent variable that can be accounted for by each of the independent variables under consideration. The equation for linear regression is written as:

$$Y=\beta_0 + \beta_1 X_1 + \beta 2X2 + \beta_3 X_3 \ldots\ldots B_k X_k + e$$

The dependent variable is Y, the independent variable is X, the Y-intercept is β0, the error in the predicted value of Y is β1, the change in the dependent variable for every unit change (an increase of 1) in the first independent variable, the change in the second independent variable, and so on. When the independent variable is equal to zero, the dependent variable's value is shown by the Y-intercept.

Before the application of the regression model, data normality was tested for dependent variables (PWB and coping with surgical stress) by applying the Shapiro-Wilk

W test. The p-value was > 0.05, indicating that the data were ready for the regression model as it was normally distributed. For this study, PWB data were normally distributed however coping with OHS stress was not distributed normally. Therefore, the researcher only applies regression to PWB data.

Then, using an independent sample t-test and an ANOVA test, the connection between each independent variable and the dependent variables was determined. Only variables with a p-value of less than 0.05 were included in a linear regression model in univariate analysis. The multicollinearity of the independent variables was tested by applying the variance-influencing factor (VIF). Variables having an IVF value of less than 10 were considered independent factors and were included in the linear regression model. Each regression model was constructed at 95% confidence intervals. All together three linear models were constructed to identify the contribution of independent variables on dependent variables (PWB). The relationships of the variables are described under each model. Tables 4.26 to 4.28 present the product of linear regression analysis of different variables.

Linear Regression Model 1

Linear regression model 1 was constructed to find out the predictive performance of the independent physical health (hemodynamic) variables. These were blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, and oxygen saturation on PWB score at 95% CI. The outcome of this model is displayed in Table 4.26. This model predicted 50% of the variance in blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, oxygen saturation, body mass index, and physical build-up as explained by PWB. This model was statistically significant using the F-test (*F*= 7.780;

p=<0.001). The constructed model for the equation was $Y=\alpha + \beta_1 X_1 + \beta_2 X_{2.} + \beta_3 X_{3.} + \beta_4 X_{4.} + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8$. Here, Y = dependent variable (PWB) and X = independent variable. X_1 = blood Pressure, X_2 = body temperature, X_3 = respiratory rate, X_4 = pulse rate, X_5 = incisional pain, X_6 = oxygen saturation, X_7 = body mass index, X_8 = physical build-up.

The equation of this model was Y (PWB) = 268.979 + 0.362 (blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, oxygen saturation, body mass index, and physical build-up). This model was statistically significant with a compound *F*-value of 7.780 (p=<.001).

Table 4.26

Linear Regression Analysis of Physical Health as Predictor for High PWB Score (n=424)

Predictors	Unstandardized β Coefficient	SE	Standardized β Coefficient	*p*-value	95% CI
Constant	268.979	36.769		<0.001	196.701 to 341.257
Blood pressure	8.381	11.282	0.041	0.458	-13.79 to 30.557
Temperature	-1.663	8.839	-0.009	0.851	-19.038 to 15.712
Respiratory rate	-30.472	14.206	-0.108	0.033	-58.397 to -2.547
Pulse rate	8.217	12.335	0.037	0.506	-16.031 to 32.464
Incisional pain	-16.584	2.458	-0.329	<0.001	-21.417 to -11.752
Oxygen saturation	-4.812	5.370	-0.043	0.371	-15.368 to 5.743
Body mass index	1.721	4.239	0.022	0.685	-6.611 to 10.053
Physical build-up	-8.081	4.015	-0.110	0.045	-15.973 to -0.188

Dependent variable(PWB), Predictor (blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, oxygen saturation, body mass index, and physical build-up), R: 0.362, Adjusted R squared: 0.114, Model F: 7.7806, p:<.001, CI: confidence interval, SE: Standard error

Source:- Field Study 2022/23

As displayed in Table 4.26, incisional pain, respiratory rate, and physical build-up were a significant predictor of the PWB of the OHS patients. The adjusted regression coefficient for incisional pain was -0.329, suggesting that patients without incisional pain would likely increase PWB by 0.329 times (*β =-0.329; p= <0.001; 95%CI=* -21.417 to -11.752). This suggested that patients with OHS incisional pain would more likely have lower PWB than patients experiencing without incisional pain. The adjusted regression coefficient for respiratory rate was -0.108, suggesting that a patient with a normal

respiratory rate would have likely increased PWB by 0.108 times (*β =-0.108; p= 0.033; 95%CI=* -58.397 to -2.547). This suggested that patients with normal respiratory would more likely have higher PWB than patients with abnormal respiratory rates. Blood pressure, body temperature, pulse rate, and oxygen saturation did not affect PWB. The adjusted regression coefficient for physical build-up was -0.110, suggesting that patients with age-appropriate physical build-up would have likely increased PWB by 0.110 times (*β =-0.110; p= 0.045; 95%CI=* -15.973 to -0.188). This suggested that patients with age-appropriate physical build-up would more likely have higher PWB than patients with no-age-appropriate physical build-up.

Linear Regression Model 2

Linear regression model 2 was constructed to find out the predictive performance of the socio-demographic variables (age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method) on PWB at 95% CI. The outcome of this model is displayed in Table 4.27. This model predicted 50% of the variance in age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method as explained by PWB. This model was statistically significant using the F-test (*F*= 3.279; *p*=0.001). The constructed model for the equation was $Y=\alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9$. Here, Y= dependent variable (PWB) and X= independent variable (living location). X_1 = age, X_2 = sex, X_3 = education, X_4 = marital status, X_5 = family type, X_6 = living location, X_7 = caretaker, X_8 = daily physical activity, and X_9 = payment method. The equation of this model was

Y (Psychological well-being)= 173.323 + (0.258) (age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method). This model was statistically significant with a compound *F* value of 3.279 (*p*=.001).

Table 4.27

Linear Regression Analysis of socio-demographic as Predictor for High PWB Score (n=424)

Predictors	**Unstandardized β Coefficient**	**SE**	**Standardized β Coefficient**	***p*-value**	**95% CI**
Constant	173.323	9.618		.000	154.417 to 192.228
Age	7.111	4.476	0.098	0.113	-1.686 to 15.909
Sex	-11.932	4.140	-0.164	0.004	-20.069 to -3.792
Education	3.168	4.138	0.043	0.444	-4.966 to 11.302
Marital status	-1.027	5.885	-0.011	0.861	-12.595 to 10.541
Family types	2.783	4.059	0.035	0.493	-5.196 to 10.763
Living location	-6.362	3.748	-0.087	0.09	-13.730 to 1.006
Caretaker	-1.107	4.910	-0.015	0.822	-10.759 to 8.546
Daily physical activity	9.905	4.`193	0.135	0.019	1.662 to 18.147
Payment method	0.632	3.620	0.009	0.862	-6.485 to 7.748

Dependent variable (Psychological well-being score), Predictor (age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method), R:0.258, Adjusted R squared: 0.046, Model F: 3.279, p: 0.001, CI: Confidence interval, SE: Standard error

Source:- Field Study 2022/23

As displayed in Table 4.27, sex and daily physical activity were a significant predictor of the PWB of the OHS patients. The adjusted regression coefficient for the sex

was -0.164, suggesting that females would likely lower PWB by 0.164 times *(β =-0.164; p= 004; 95%CI= -20.069 to -3.792*). This suggested that OHS male patients would be more likely to have higher PWB than OHS female patients. Likewise, the adjusted regression coefficient for the daily physical activity was 0.135, suggesting that physically active patients would have higher PWB by 0.1135 times *(β =0.135; p= 0.019; 95%CI= 1.662 to 18.147*). This suggested that OHS patients who were physically active would be more likely to have higher PWB than those physically inactive OHS patients.

Linear Regression Model 3

Linear regression model 3 was constructed to find out the predictive performance of the independent variable (variables of physical health) on PWB at 95% CI with controlled variables (socio-demographic variables). The model is displayed in Table 4.28. The statistical significance of this model with *F test* (ANOVA) and autocollinarity with Durbin Watson. This model predicted 50% of the variance in blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, oxygen saturation, body mass index, and physical build-up as explained by psychological well-being with controlled variables age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method. This model was statistically significant using the *F-test* of model I (*F*= 7.780; *p*=<0.001) and the *F-test* of model II (*F*= 5.402; *p*= <0.001). The constructed model for the equation was $Y=\alpha + Y=\alpha + \beta_1X_1 + \beta_2X_{2.} + \beta_3X_{3.} + \beta_4X_{4.} + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_{8,}$ with controlled variables (age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method).

Table 4.28

Linear Regression Analysis of Physical Health as Predictor and Socio-demographic as Controlled Variables for PWB (n=424)

Predictors	**Standardized β Coefficient**	***p*-value**	**PWB**	
			R^2	**Adjusted R^2**
Model I				
Blood pressure	0.040	0.468		
Temperature	-0.011	0.824		
Respiratory rate	-0.108	0.033		
Pulse rate	0.037	0.497	0.131	0.114
Incisional pain	-0.338	<0.001		
Oxygen saturation	-0.059	0.221		
Body mass index	0.022	0.685		
Physical build-up	-0.110	0.045		
Model II				
Blood pressure	0.029	0.590		
Temperature	-0.002	0.966		
Respiratory rate	-0.101	0.041		
Pulse rate	0.048	0.373		
Incisional pain	-0.333	<0.001		
Oxygen saturation	-0.054	0.264		
Body mass index	0.019	0.726	0.185	0.151
Physical build-up	-0.098	0.080		
Age	0.082	0.164		
Sex	-0.145	0.008		
Education	0.076	0.158		
Marital status	0.019	0.758		
Family types	0.019	0.690		
Living location	0.065	0.187		
Caretaker	-0.026	0.678		
Daily physical activity	0.075	0.182		
Payment method	0.029	0.535		

Dependent variable (Psychological well-being score), Predictor (physical health), Controlled (socio-demographic), R: 0.348 (model I) and 0.422(model II), Model I (F: 9.555, p:<0.001), and Model II (F: 5.869, p:<0.001), R^2: R square, Source:- Field Study 2022/23

As displayed in Table 4.28, physical variables (blood pressure, body temperature, respiratory rate, pulse rate, incisional pain, oxygen saturation, body mass index, and physical build-up) as a predictor, and socio-demographic variables (age, sex, education, marital status, family type, living location, caretaker, daily physical activity, and payment method) as controlled variables for PWB. The adjusted R^2 for model I was 0.114, and the adjusted R^2 for model II was 0.151. The sex and respiratory rate were the significant predictors of PWB while the socio-demographics were the controlled variables.

4.2 Qualitative Study

This section included QUAL content analysis, which is a method for distilling unprocessed data into themes or categories using sound interpretation and inference. Through meticulous analysis and ongoing comparison, themes and categories are extracted from the data using inductive reasoning.

The introduction of the caregiver's narrative and the data analysis related to the sixth goal of this study, to investigate the experiences of the OHS patients' caregivers with regard to PWB and managing postoperative stress—mark the beginning of the qualitative findings. The specific research question for this purpose was "How do caretakers of OHS patients experience while caring for them?" The findings consist of interviews with six caretakers of the OHS patients admitted to the MCVTC, Kathmandu. They are presented in two sections: demographic descriptions of the caretakers, and thematic findings from data analysis.

4.2.1 Demographic Descriptions of the Caretakers

All of the caretakers who participated in this study were aged ranging from 25 to 46 years. An in-depth interview (IDI) was conducted from the fourth to the nineth postoperative day of OHS. Among them, two (33.3%) were male and four (66.6%) were female. The interview was taken with the spouse and daughter of the patient with OHS. Fifty percent of caretakers who participated in the qualitative study were from single families and 50% were from joint families. The demographic characteristics of the caretakers are presented below.

Table 4.29

Demographic Characteristics of the Caretakers Participated in Qualitative Study (n=6)

S.N.	Age in Years	Interview's Day since Operation	Sex	Relation with Patient	Type of Family
1.	28	9^{th}	Female	Daughter	Joint
2.	25	5^{th}	Female	Daughter	Joint
3.	45	6^{th}	Male	Husband	Single
4.	38	4^{th}	Female	Wife	Single
5.	42	8^{th}	Female	Wife	Joint
6.	46	4^{th}	Male	Husband	Single

Source: Field Study 2022/23

In Table 4.29, the demographic characteristics of the caretakers who participated in the in-depth interview were presented.

4.2.2 Explore the Experiences of Caretakers

Thematic analysis is a technique for examining qualitative data that entails going over a collection of data and searching for themes by identifying patterns in the data's meaning. Making sense of the data is an active reflexive process where the researcher's

subjective experience is key. Chapter III presents the thematic analysis step under the topic of the qualitative data analysis procedure. (See pp. 83-85) In this study, the researcher finds out the six themes, on which the interview was analyzed. The themes that were identified during the analysis have been presented in Table 4.30.

Table 4.30

Identified Themes and Key-term for the Qualitative Data

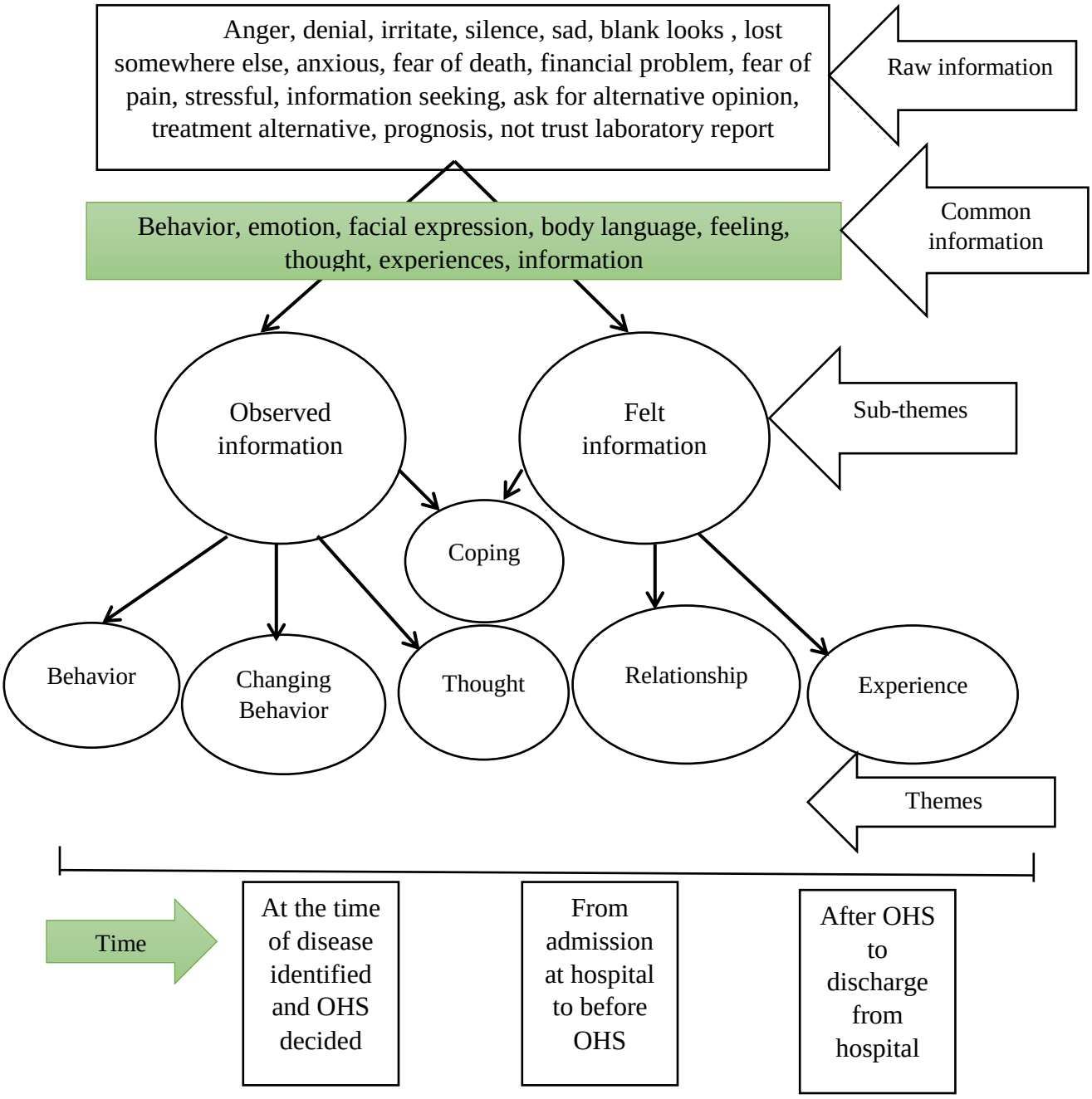
SN.	Themes	Key-term
1.	Behavioral Changes	➢ Information seeking ➢ Psychomotor behavior ➢ Emotional behavior *"What is open heart surgery(OHS)? How it is performed? My heart surgery be successful or not, if not what will happen? Shall I live my life normally after OHS? In which hospital this kind of operation has been performed? How much does this operation cost? Who is the renounced doctor for OHS? OHS will be operated in Nepal or should I go to India for treatment?"(P1, P2, P3, P4, P5, P6)*
2.	Common Thoughts	Frequently talked about the operation, the success rate of OHS, medication they need to take, incisional pain and discomfort, fear of death, financial burden, and physical health issues such as anorexia, and insomnia.
3.	Relationship with caretaker	The relationship between the patient and caretaker was intimate emotionally. *"Don't worry anything will happen to me, my operation will be successful, and in this hospital… OHS operation like mine has been done daily…" even though they seem anxious (P2, P4.)*
4.	Changing Pattern of Behavior	Diagnosis → Decision of OHS→ On admission → On the day of OHS→ After OHS (complication or no complication) High stress →increases stressful behavior→stress continues → lower down if no complication is present→and increases stress if a complication is present after surgery, stress resolved gradually if complication absent.
5.	Coping with OHS	Coping is influenced by the available support system, social environment, physical environment, and personality.

		The common strategies used by patients to cope with the OHS were: Religious, reflection, reassurance, belief & support, and acceptance.
6.	Experiences of caretakers	Mixed feelings about dealing with the patients of OHS. OHS is a major surgery, it takes time to recover, costly, and one person should continuously with the patient, which leads to further financial burdens. Caretaker's experience, OHS is a very stressful treatment modality for patients, caretakers, and family members, due to financial issues, time management, and frequent follow-up to adhere to the treatment.

Table 4.30 shows, the identified themes of the qualitative data such as behavioral changes, thoughts, relationships, changing patterns of behavior, coping, and experiences of caretakers with key terms of the findings. Before reaching the final themes, the researcher rigorously read the transcribed raw data or verbatim, identified the common information, categorized the information, sub-categorized the themes, and finally reached to above-mentioned themes. The thematic map has been presented below in Figure 4.2. This thematic map tried to explain the technique of qualitative data analysis steps which has been followed by the researcher to analyze the qualitative data in this study.

Figure 4.2

Diagrammatic Presentation of Thematic Map



Source:- Field Study

4.2.2.1 Behavioral Changes of OHS Patients

Behavior is how one acts or conducts oneself, especially towards others in response to a particular situation. Behavioral changes can be considered as changes in an individual's behavior in comparison to previous behavior due to any situation or unexpected event. It may be a temporary or permanent change in behavior that can be affected by the individual response to the events, available support system, environment, and so on. In response to the OHS stress behavioral change can vary individually versus universally.

The behaviors that were explained as varied were influenced by particular patient's personalities. How they reacted to the challenging situation, the support system available at home, and the social environment. For example, those patients who were extroverted and talkative seemed strong emotionally. Their willpower and optimism towards the event resulted in fewer changes in behavior than those who were introverted.

Those behaviors that were explained as universal were directly linked with the physical environment or issues generated by the particular events. Regarding the issues of OHS, incisional pain, financial burden, and insomnia due to the hospital environment, ICU environment, and dyspnea due to pathological conditions seem universal factors to trigger the changing behavior.

Participants commonly manifested behavior, first frequently asking questions and trying to get answers related to OHS from professionals, caretakers, friends, and the internet. Extroverted participants asked more questions to professionals, friends, and caretakers than introverted to get answers. However, those who were introverted searched

the internet and followed newspapers more than extroverted to get answers to their queries. Those common questions they tried to look for answers by asking or searching before deciding to operate OHS were, What is open heart surgery? How it is performed? My heart surgery be successful or not, if not what will happen? Shall I live my life normally after OHS? In which hospital this kind of operation has been performed? How much does this operation cost? Who is the renowned doctor for OHS? OHS will be operated in Nepal or should I go to India for treatment?(P1, P2, P3, P4, P5, P6)

Those are the questions they commonly looked for answers to immediately before and after surgery were, How long does the operation take time to complete? How much OHS will be painful? How long do I need to stay in the intensive care unit? How long do I need to take this medicine for full recovery? When I will get rid of pain, discomfort, and medicine?(P1- P6)

The second most common behavior change was psychomotor activities. They remain less active, stay calm in bed or sofa, and do not engage in outdoor activities. They stay at a place and spend their time on the internet using a mobile or laptop. However, patients with OHS started to exercise regularly.

Finally, the third one was emotional behavior changes, almost all participants commonly manifested nervousness, anxiety, irritation, anger, happiness, lost somewhere, blank looks, and stress. They quickly shift from one emotion to another while they experience changes in emotional behavior. For example, they were so irritated while having pain; however, they seemed happy immediately after their pain subsided after being given pain medicine (analgesia).

In general, participants experience alternation over their transit thought, emotion, and psychomotor behavior while facing OHS. When these changes in behavior happen temporarily the participant resumes their previous behaviors leading to coping with the situation easily. However the changes in behavior permanently, the participants might face difficulty in coping with the OHS.

4.2.2.2 Common Thoughts of OHS Patients

OHS is an unexpected event for patients diagnosed with CVDs. They go through various phases of OHS while managing cardiovascular problems. The common responses of the caretaker of the OHS patients were mentioned below while asking, “Nowadays, what types of matters do patients usually talk to you after deciding to do OHS?”

Almost all caretakers said they talked about the operation, the success rate of OHS, medication they need to take, incisional pain and discomfort, fear of death, financial burden, and physical health issues such as anorexia, and insomnia. If the patients were heads of the family, they were more focused on financial burden than those who were other than breadwinners in the family. However, if the patient was not a breadwinner in the family, they were more focused on the operation (OHS), the success rate of OHS, medication they need to take, incisional pain and discomfort, fear of death, physical health issues such as anorexia, and insomnia. Common sentences patients used to express with their caretakers were, What will happen if I’m dying due to this OHS? Whether my OHS is going to be successful or not, I have doubts, If my operation is not successful please take care of our home after me. Could I do OHS or not, what is your opinion? My sternum bone is going to be cut using the machine, isn’t it scary? I think OHS should be done in a timely after being complicated, what do you say?(P1-P6)

According to caretakers OHS patients commonly think about the issues related to deciding on OHS such as financial issues, operative procedure, success rate of operation, surgeon involvement, and fear of death before surgery. Common queries were, “How much cost I should pay for the operation? Is there any financial scheme from the government? What duration will take to complete my operation? Who will do my cardiac operation? Dr. Bhagawan Koirala do my operation?”(P1-P6)

Caretakers also mentioned that after OHS patients usually talked about incisional pain, activities of daily living resume, medication, fear of death, exercise, insomnia, loss of appetite, and prognosis. Patients' words from the caretaker's mouth were,“When will this incisional pain be completely gone? When I will be able to have sound sleep without pain, and need your assistance to change my position? Oho god! Why you make me alive is painful (P1). How long this medication should I take, is it lifelong? I'm having pain while doing exercise, I don’t like that physiotherapist, and she asked me to do the exercise again. I think if pain continues like this I will die. How many people will die after this operation? (P1-P6)

Immediately after extubation in the post-operative surgical ICU, patients thought they were saved by god, and their operation was successful. When they first meet their care-taker, they commonly said, “Nani, I’m alive…operation is successful, god keep alive me(P2, P3, P5 P6). My operation is successful due to god blessing. Thank you god my operation is finished (P2, P5). Now I might be alive… look, nothing is happened to me, you were worried unnecessarily.” (P1, P4)

"नानी, म बाँचे....अप्रेसन सफल भयो, भगवानले बचाउनु भयो। (P2, P3, P5, P6) मेरो अप्रेसन सफल भयो भगवानको कृपाले, धन्यवाद भगवान। मेरो अप्रेसन सकियो? (P2, P5) अब म बाँच्छु होला ... देख्यौ ! मलाई केहि भएन, मेरो अप्रेसन सफल भयो, तिमि त्यतिकै पिर लिन्छौ" (P1, P4).

After transferring the patient from the ICU to the general ward, they thought they were given less attention from health professionals. So, they are having more complications such as pain, loss of appetite, insomnia, etc. which were not addressed on time, and doctors and nurses were not available at the bedside for over 24 hours. In their own words, "After coming in this bed doctors and nurses are not taking care of me like in ICU, I'm having pain but they don't respond quickly."

Instant thoughts of the OHS patients according to the caretaker were cardiovascular diseases, their treatment, and issues arising from OHS.

4.2.2.3 Relationship with Caretaker

The caretaker in this study referred to the nearest person of the patient who took responsibility to look after and take care of the patient. S/he must be living with the patient before, during, and after hospitalization continuously at home and hospital. This is why, the relationship between the patient and caretaker was intimate emotionally. They were open to each other. Caretakers also understand the non-verbal clues of the patient. The caretaker mentioned that they told her to worry nothing would happen even though they seemed anxious. They tried to hide their fear and anxiety before going to the operation. Common responses of patients according to caretakers were, "Don't worry nothing will happen to me, my operation will be successful, and in this hospital, OHS

operation like mine has been done daily…"(P2, P4), even though patients seem anxious while going to operation room.

Emotional intimate relationships between caretakers and patients help the OHS patient cope with the situation easily. Patients feel special as well as responsible toward their nearest person, which leads them to gain confidence in their lives.

4.2.2.4 Changing Pattern of Behavior of Patients

In this study, changing pattern of behavior deals with the behavior of the patients from being well-informed about the OHS to deciding on OHS, at the time of admission, on the day of the operation, and after the operation. The pattern usually refers to the time duration. Therefore, changes in behavior were observed by their caretaker from informed OHS as a treatment modality to after OHS.

Almost all the patients tried to get answers to their quires from the health professional by frequently asking the questions until they received their satisfactory answer. They also talked with friends, trustworthy people, neighbors, and searched the internet, read books & newspapers immediately they were informed that the treatment modality for their CVD was OHS. According to the caretaker patient told them, I slept late night yesterday while searching about the OHS, CVD, so that I feel not fresh today. (P2, P4). Nani, Please call your maternal uncle, I will talk with him, he might know a nice doctor (P1). I go to visit and talk with my neighbor, they recently did the operation of their mother, I will also talk with their mother (P3).

Then they experience sleepless nights, start staying alone, and have blank looks that seem lost somewhere. They tried to explore alternatives talking or sharing their

problem with their nearest one and family. Once they decided to do OHS, they visited a surgeon to gain trust by further discussing with the export. According to caretaker, while communicating to surgeon, patient frequently requesting to plan OHS at earler date. They said, “I know the only treatment option for my disease is operation, so I will do the operation. If possible please give me near date time to do my operation. I don’t want to keep this disease anymore” (P1-P6)

On the day of OHS, they experienced fear and anxiety at their peak. They were nervous and tried to deal with the situation. If the available support system was well they release their emotion by talking to caretakers, relatives, other patients, and health personnel. Some patients just stay calm and try to normalize the situation by talking with the god within themselves. According to the caretaker, Don’t worry, nothing will happen to me, I will be ok after the operation” but they seem anxious, faces look pale due to fear of the operation (P1-P3). Caretakers mentioned, he said in the morning, “Should my operation is going to be a success or not, I feel doubt, if my operation is not successful please take care of our home after me” While going to the operation theatre he tried to look happy, and talking with all other family members (P5).

After the operation, they were satisfied thinking that their major OHS was successful. The pattern of behavioral changes started from a highly stressful situation at the time of deciding to do OHS to a low stressful situation after OHS.

4.2.2.5 Coping with the OHS

In this study, coping was considered as a patient’s strategy to adjust to the major surgery-related stress after OHS. Patients of OHS tried to get answers by frequently

asking questions, reading, and searching. Then they tried to surround themselves with available support systems. Those support systems might be financial, emotional, psychological, or spiritual.

Extroverted talked to health personals, exports, friends, neighbors, and trustable persons for the arrangement of a support system. On the other hand, introverts talk to god and caretakers about the arrangement of a support system. Then they accept the health situation to gain the trust of health personnel. Likewise, if they were optimistic and gained trust their health prognosis was good without facing any complications; the duration of their hospital stay was reduced. However, if they were pessimistic and lost trust, their health prognosis was bad with more complications and prolonged hospitalization.

Therefore, coping with OHS is mainly influenced by the available support system, social environment, physical environment, and personality of the particular patient with OHS. The common strategies they follow to religious, reflection, reassurance, belief and support, and acceptance.

4.2.2.6 Experiences of Caretaker

It is not an easy task to witness the pain of your loved one struggling for life at the hospital and at home. The experience of caretakers was mixed to deal with the patients of OHS. OHS is a major surgery, it takes time to recover, costly, and one person should continuously with the patient, which leads to further financial burdens. Caretakers stated, “I feel bad. I wish them a quick recovery to the god. I don’t need anything just his recovery. He always asks, “How long do I take this medicine?”(P1-P6). OHS patients

also complained of incisional pain frequently. Caretakers said, “It is so difficult to explain how I dealt with them during their illness and treatment (P1, P2). I feel it is better to be patient than caretaker…” (P3, P6). Likewise, caretaker was the one who could share patient’s emotion (pain, happiness, sorrow, anxiety, fear, and stress) at a very first moment. They stated, “I feel glad that my husband’s operation is successful. It is so painful to eye-witness our loved ones struggling for life and death…” (P1, P2, P4).

According to the caretaker, OHS is a very stressful treatment modality for patients as well as caretakers and family members, due to financial issues, time management, and frequent follow-up.

4.3 Triangulation of Quantitative and Qualitative Findings

Triangulation is a process of combining an data from different sources to study a particular social phenomenon. Historically, it was used in mathematics to determine the location of a fixed point based on the laws of trigonometry. After 1978 only Norman Denzin started to apply basic types of triangulation in the social sciences. Data triangulation, investigator triangulation, theory triangulation, and methodological or technique triangulation are the four categories of triangulation that he described. Triangulation of data and methods was employed in this study (Fusch et al., 2018). Information was gathered from patients and caregivers as part of the data triangulation process. Similarly, as a triangulation technique, this investigation was carried out using mixed methodologies (QUAN and QUAL). Triangulation can be used to saturate the data (Fusch & Ness, 2015) and improve the trustworthiness of the study outcomes (Stavros & Westberg, 2009).

In the QUAN study, 275 (64.86%) of the caretakers were the spouses of the patient, therefore researcher decided to conduct in-depth interviews among 4 (66.66%) of spouses. In the PWB domains, autonomy had the highest mean score (28.35±7.17). In the personal growth domain, psychological well-being was the highest 293 (69.11%). However, low PWB was equally highest among the two domains which were purpose in life and self-acceptance149 (35.14%). In general, 306 (72.17%) of patients with OHS had high PWB. Likewise, 40 (9.43%) of OHS patients had ineffective coping skills. However, 266 (62.73%) of them had moderate coping skills, followed by 118 (27.83%) of them had effective coping skills for using five different strategies. 263 (62.02%) of patients had faith in god and prayed religiously followed by 244 (57.55%) patients who used to believe and support and 150 (35.38%) of them used reflection as an effective coping skill. Factors affecting PWB and coping strategies were the personality of the patients, available support system, financial support, social support, emotional support, spiritual trust, and incisional pain. The qualitative findings also reveal these five strategies were commonly used by the patients to cope with OHS stress such as reflection, belief and support, reassurance, religious, and acceptance.

Regarding hemodynamic status as physical health, 220 (51.93%) of the patient's vital signs were normal without using inotropes. Whereas, 300 (70.75%) of patients with OHS had experienced no incisional pain while collecting data. The remaining 124 (29.25%) of patients had mild to severe pain. Data were collected after managing moderate to severe incisional pain in the patients. The data was collected after fourth post-operative day when the patient was shifted from the ICU to the general ward. On observation, the researcher found that 419 (98.82%) of patients were easily approachable

for the rapport built up, followed by 389 (91.75%) patients whose body posture was guarded, and 297 (70.0%) of patient's facial expressions seem anxious. Likewise, 131 (30.90%) of patients were healthy (well nourished) remaining 293 (69.10%) of the OHS patients were malnourished (underweight and overweight). Among them, 248 (58.5%) of the patients with OHS physique looked appropriate to their age. Caretakers of the patients with OHS also observed the guarded posture and anxious looks of the patients.

The PWB of the patients with OHS was significantly associated with sex, living location, incisional pain, and age-appropriate physique. Male patients had 2.199 times higher PWB than females; patients living in the municipality had 1.751 times higher PWB than those living in the rural municipality. Likewise, patients with no pain had 5.1020 times highest PWB than those experiencing mild to severe pain, and patients with age-appropriate physical build-up had 1.729 times highest PWB than those patients with no age-appropriate physical built-up. The coping of the patients with OHS was significantly associated with marital status and vital signs of hemodynamic status. The effective coping strategies were adopted by the patients who were married. Those married patients with OHS had 2.278 times more effective coping than those patients living single, and those patients with normal vital signs without the administration of inotropes had 2.331 times more effective coping than those patients with normal vital signs with the administration of inotropes.

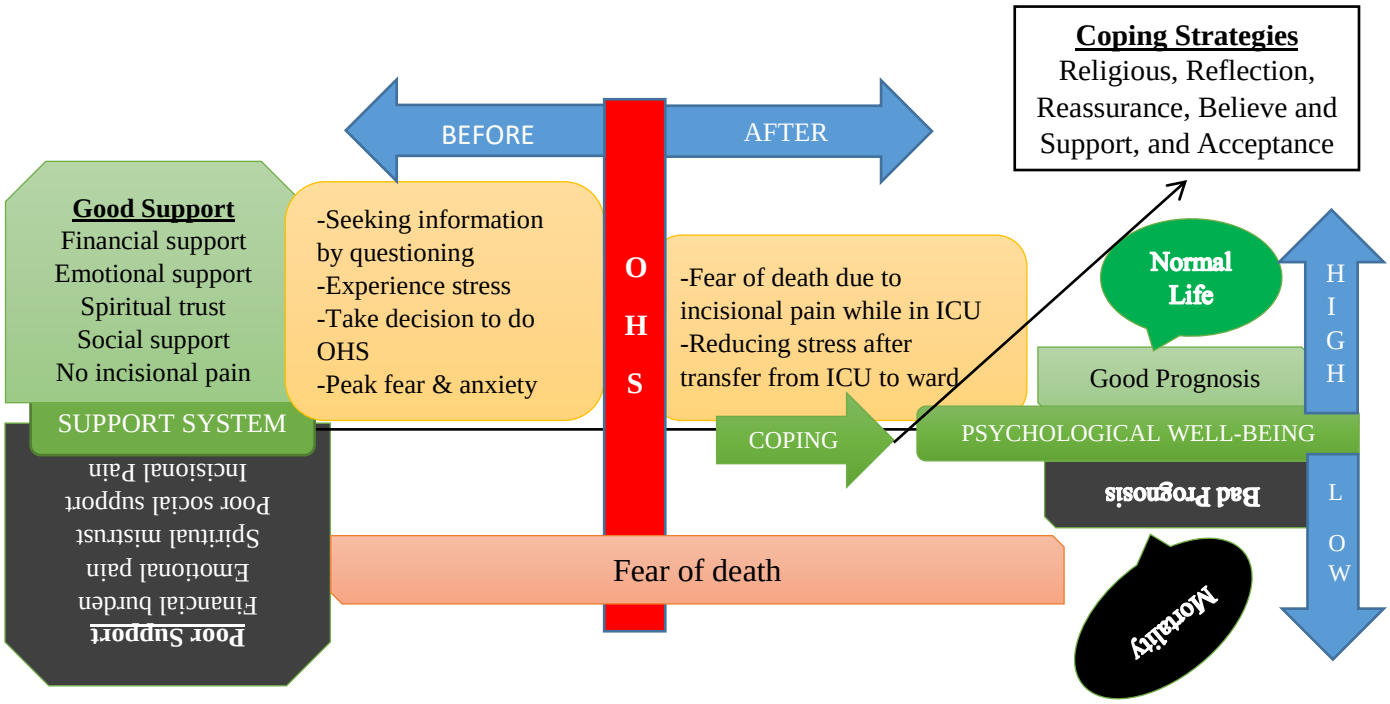
Regarding the observation findings, which revealed almost all OHS patient's general appearance looked normal, maintained eye contact during data collection, easy to develop rapport, their body posture was guarded (protect the incisional site), and friendly. Likewise, qualitative findings also support that the experiences of incisional pain make

aggressive and irritate the patients easily. Behavioral changes of the patients with OHS were influenced by the personality of the patients, the support system available, the social environment, and the physical environment (incisional pain, irritation, financial burden, ICU environment, and pathological condition). Patients go through several phases of cognitive changes to develop coping. Firstly they asked questions to gain information (reflection), changes in conative behavior (staying in bed for a long time alone, guarded posture), and changes in emotional behaviors (anxious, nervous, fearful, happy, sad, irritate, blank looks, and stressed).

The common thought of the patients with OHS was related to the operation, success rate, medication, incisional pain, fear of death, financial burden, and physical health issues. The relationships between the patients and caretakers were open to each other, and intimate emotionally. The changing pattern of behaviors started from seeking information, experiencing stress, and decision-making for OHS experiencing peak levels of fear and anxiety, to gradually reducing stress levels. Therefore, the overall experience of caretakers to care patients with OHS was a very difficult task. They concluded OHS was a very stressful treatment modality. The summary of the findings is presented in Figure 4.3.

Figure 4.3

Diagrammatic Representation of the Summary of the Findings



Source: Field Study 2022/23

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The triangulation, conclusion, limits, implications, and suggestions based on the study's findings are covered in this chapter along with the discussion of the QUAN and QUAL findings. In addition to being presented to the research questions and objectives of the study, the QUAN and QUAL findings are also compared with those of other studies from the evaluated literature. The study's findings led to conclusions. Recommendations give direction to future researchers and suggestions for improving the present study for generalization.

5.1 Discussion

The findings are discussed in this part under the titles of mixed findings, QUAN findings, and QUAL findings. The conceptual framework for the experience of caregivers, PWB, managing surgical stress, and related aspects serves as the basis for the discussion.

Finding out the PWB status and coping mechanisms of OHS patients hospitalized to tertiary care hospitals was the aim of the QUAN study. The study offers some intriguing findings in the form of numerical or statistical data regarding the association between PWB and coping mechanisms of individuals who are particularly susceptible to stress as a result of hospitalization and OHS. This study was a unique attempt to understand the PWB and coping of patients admitted to hospitals for OHS. The study further looked into the association between PWB and different variables of coping strategies, and their domains with PWB domains.

5.1.1 Status of PWB and Coping with OHS Stress

The study showed that of OHS patients admitted to the hospitals, 306 (72.17%) had high PWB, and 118 (27.83%) patients had low PWB. Domain-wise, personal growth was 293 (69.11%), followed by autonomy 288 (67.93%) had higher PWB. In purpose of life and self-acceptance, 149 (35.14%) of patients with OHS had low PWB. It was high in comparison to personal growth and autonomy. According to earlier research, those with high PWB do not experience loneliness, have ample opportunity to interact with others, engage in social activities, and reside with family members (Kovalenko & Spivak 2018).

A person can feel happy and live a normal life even in difficult situations if a support system is available (Kovalenko & Spivak, 2018; Vaznoniene, 2014; Pavlotskaya, 2014; Khatri, 2021). Majorities of patients with OHS were living with family members and spouses as caretakers. Family members never leave the patient alone in the hospital. In a cardiac specialization center similar diseases patient were admitted, and they have opportunities to share their experiences and listen to others might work as a kind of group therapy. Another study conducted by Zulfitri et al. (2019) from Indonesia found 56.5% had well PWB among the person with chronic illnesses living with family. The study findings are also similar to this study.

Regarding coping with OHS stress, the present study showed 266 (62.73%) of the OHS patients had moderate status of coping skills, followed by 118 (27.83%) had effective coping skills using different strategies, whereas only 40 (9.43%) had ineffective or poor coping with OHS stress. The data were collected after fourth post-operative day of surgery when the prognosis was improving, critically ill patients were excluded, and

this may be one reason that coping skill seems effective using various strategies. Caretakers also mentioned that patients experienced a high level of stress before deciding on OHS, and before going to the operation theatre. Domains-wise, 263 (62.02%) of the patients had fate on god and praying being a religious followed by 244 (57.55%) of patients who used belief and support, and 150(35.38%) of them used reflection as an effective coping skill. Similarly, 230 (54.25%) of OHS patients had used acceptance, followed by 194 (45.75%) used reflection, 189 (44.58%) used reassurance, and 140 (33.01%) used belief and support as a moderate coping skill.

However, 168 (39.62%) of them used reassurance, followed by 131 (30.89%) had used acceptance as an ineffective/ poor coping skill. The result from the interview of caretakers also identified that patients used religious, beliefs and support, reflection, reassurance, and acceptance as coping strategies. The majority of participants in a European study by Fadhel and Adawi (2020) cited religion as a constructive coping strategy. The results showed that coping strategies were impacted by the social and cultural elements of the participant's living environment, and that the impact of stress and coping depended on how it was perceived. Another study conducted by Aust et al. (2016) had also a similar finding to this study. According to a qualitative study on the psychological effects and coping mechanisms following major surgery in adults carried out in Malaysia, adults employ adaptive coping mechanisms like getting professional assistance, practicing self-management, being optimistic, and practicing spirituality, in addition to offering and receiving support from loved ones (Divaasini & Zhooriyati, 2019).

5.1.2 Association of Dependent and Independent Variables

In this study dependent variables were PWB and coping with OHS stress. Likewise, Independent variables were sociodemographic (age, sex, marital status, living location, daily physical activities, education), and hemodynamic and physical characteristics of OHS patients (vital signs, incisional pain, oxygen saturation, physical built-up according to age, and body weight).

5.1.2.1 Psychological Wellbeing

The present study findings identified an association between PWB with the sex of the patients and their living location. This finding was similar to the findings of Chamuah and Sankar (2017), Zulfitri et al. (2019), and Khatri (2021). The PWB of the males was 2.199 times higher than female OHS patients. It might be because males had higher autonomy than females in Nepalese context. Whereas, female's life-decision was taken directly and indirectly whether by their father, husband, or son in Nepalese society. Likewise, a patient from a municipality had 1.751 times higher PWB than patients from a rural municipality. The life style and their living culture of rural and urban has been different according to availabilities of modern facilities. Family structure, physical facilities, daily physical activities, and support systems vary in the municipality as urban and rural municipality. There was no association with age, marital status, educational level, and daily physical activities, which supports the study from Portugal, India, and Indonesia (Cachioni et al., 2017; Chamuah & Sankar, 2017; Akila et al., 2019; Zulfitri et al., 2019).

In line, the study revealed there was also an association between PWB and incisional pain, and physical built-up according to age. The patients having no incisional pain had 5.102 times higher PWB than OHS patients's experienced incisional pain. Similarly, patients with age-appropriate physical built-up had 1.729 times higher PWB than OHS patients with no age-appropriate physical built-up. However, there was no association with vital signs, oxygen saturation, and physical build-up according to the body weight of the OHS patients. In the literature, there was a paucity of data regarding the association of PWB with hemodynamic variables, and physical built-up.

5.1.2.2 Coping with OHS Stress

The study claimed that there was a significant association of coping skills with marital status and vital signs of the OHS patients from sociodemographic and hemodynamic variables respectively. The coping with OHS stress of the married patients was 2.278 times higher than those who remained single and unmarried. Whereas, patients whose vital signs were normal without using medicine to increase blood pressure had 2.331 times more moderate to effective coping skills than those whose vital signs were normal with used medicine to increase blood pressure. However, there was no association with age, sex, educational status, daily physical activities, incisional pain, oxygen saturation, or physical build-up according to body weight and age. A study conducted by Hadlandsmyth et al. (2017), concluded that pain intensity and pain-related distress had an association with anxiety, depression, and catastrophizing. This finding slightly contradicts the present study, coping and behavioral distress which failed to develop a linkage between coping rather than PWB. Belief and support were a coping strategy of OHS patients, married patients had spouses for their emotional support, which has been

crucial during stressful situations to cope with stress. The majority of OHS patient's caretakers were spouses in this study.

5.1.3. Relationship between PWB and Coping with OHS Stress

The present study revealed no correlation between PWB and coping with OHS stress because these two dependent variables were measured by using different tools. This study found strong positive co-relation ranging from r=0.827 to r=0.852 of PWB with their domain at 0.01 level of significance. This finding was consistent with the study findings of Grønning et al. (2018), and Azadi et al. (2020), at a significant level (p-value <0.001). However, coping strategies of OHS patients, religious (r=0.123), and acceptance (r=0.113) had a weak correlation with PWB at <0.05 level of significance.

The present study also revealed a strong relationship between reflection(r=0.623), belief and support (r=0.722), reassurance (r=655), and acceptance (r=816) to coping with OHS stress. However, religious (r=0.348) had moderate relation at <0.01 level of significance because these all five domains were the core strategies of OHS patients coping. A study conducted by Boima et al. (2023) in Ghana found coping strategies had a positive and significant correlation with their coping skills. There has been a weak correlation (r=0.102) between coping with OHS stress, and autonomy domain of psychological well-being of the OHS patients at < 0.05 level of significance. However, there is no correlation between coping with OHS stress, PWB, and its other remaining domains such as environmental mastery, personal growth, positive relation, purpose in life, and self-acceptance. However, subdomains of religious, acceptance, and autonomy were related to psychological well-being and coping with OHS stress.

The study findings also showed that 72.17% had high PWB, and 90.56% had moderate to effective coping skills. Even PWB, and coping were found not to correlate with the well-being score because the PWB and coping are subjective. This finding was similar to the result of the study by Freire et al. (2016) in Spain.

5.1.4 Predictors of Psychological Well-being

The purpose of the linear regression model, by enter methods, was constructed to (a) determine which independent predictor has the most impact on the dependent variable by analyzing how each independent variable contributes to the value of the dependent variable's PWB score. Coping with OHS stress data was not distributed normally therefore the effect on PWB was only identified. When others remained constant sex, respiratory rate, incisional pain, and age-appropriate physical build-up were the predictors for PWB.

The present study suggested an adjusted regression coefficient for sex was -0.142 suggesting that male over female sex would likely increase PWB by 0.142 times (β =-0.142; p= 009; 95%CI= -18.061 to -2.590). This suggested that male patients with OHS would more likely have high PWB than female patients with OHS. Regarding physical health, an adjusted regression coefficient for the respiratory rate was -0.110, suggesting that OHS patients with abnormal respiratory rate would likely decrease PWB by 0.110 times (β =-0.110; p= 029; 95%CI= -58.585 to -3.149). This suggested that OHS patients with normal respiratory rates would have higher PWB than OHS patients with abnormal (high or low respiration) respiratory rates.

The incisional pain was another predictor of PWB. The adjusted regression coefficient for incisional pain was -0.316, suggesting that incisional pain would likely decrease PWB by 0.316 times (β =-.316; p= <001; 95%CI= -20.797 to -10.890). This suggested that OHS patients in incisional pain would likely have lower PWB than OHS patients who experience no incisional pain. Likewise, the physical build-up seems a predictor for PWB, where OHS patients with age-appropriate physical build-up would likely increase their PWB 0.110 times more than patients with no-age-appropriate physical build-up. However, after controlling the confounders, it did not significantly affect the PWB statistically.

5.1.5 Explore the Experiences of Caretakers

The QUAL study's goal was to investigate the experiences of caretakers of OHS patients based on various identified themes such as behavioral changes, common thoughts, and relationship with the caretaker, changing patterns of behavior, coping with OHS, and experiences of caretakers of the patients with OHS admitted in the tertiary care hospitals. The study provides some interesting findings of the patients who are especially vulnerable to stress due to hospitalization and OHS from the caretaker's perspective. This study was a unique attempt to understand the behavior, thoughts, and relations of OHS patients admitted to hospitals for OHS to cope with stress and maintain PWB.

The QUAL findings of this study were based on the six themes that are developed through reading the transcribed verbatim. In OHS patients behavioral changes were aggressive before the OHS due to stressors related to surgery and hospitalization (Singh & Shrestha, 2017), peaking on the day of the operation (Ramesh et al., 2017), and

gradually subsiding after surgery, if there was no any unfavorable event occurred after surgery (Younes et al., 2019). This is the normal behavioral change pattern seen among OHS patients. A study finding from China and Ghana was similar to the finding of this study (Boima, et al., 2023; Chen et al., 2023)

Patients with OHS frequently asked questions related to OHS immediately when their surgeon informed them that the ultimate treatment modality of their health condition was OHS to seek information related to OHS. A study by Aust and the team also concluded that conversations with medical staff and seeking information are central to supporting the patient's individual coping efforts. Then their stress is reflected in their psychomotor behavior as they remain less active, stay calmly in bed or sofa, and do not engage in outdoor activities physically. However, they spend more time staying alone and thinking about matters and spend more time on the internet using mobile (Aust et al., 2016; Boima, et al., 2023; Chen et al., 2023).

The prominent changes of OHS patients showed emotional behavior changes such as quick irritation, anger, stress, anxiety, loss somewhere else, blank looks, feeling happy, etc. This behavior varies individually. This finding was supported by the study of Chen et al. (2023) and Aust et al. (2016). Those patients whose responsibility toward the family was more break emotional than those who had a minimum role in the family (Terry et al., 2020).

Caretaker experiences OHS as a very stressful treatment modality for patients as well as caretakers and family members (Bryson et al., 2014). Caretakers experience that OHS patiently commonly think about the operation, the success rate of OHS, medication they need to take, incisional pain and discomfort, fear of death, financial burden, physical

health issues (e.g. anorexia), and insomnia. Almost all participants trust god, they thought their OHS was successful because of the blessing they received from god (Boima, et al., 2023; Chen et al., 2023; Terry Clark et al., 2020). In this study, coping was considered as a patient's strategy to adjust to the major surgery-related stress after OHS. Patients of OHS tried to get answers by frequently asking questions, reading, and searching. Then they tried to surround themselves with available support systems. Those support systems might be financial, emotional, psychological, or spiritual. Therefore, coping with the OHS is mainly influenced by the available support system, relationship with the caretaker, social environment, physical environment, and personality of the particular OHS patients. The identified coping strategies were reflection, belief and support, religious, reassurance, and acceptance.

In general, the experience of caretakers was difficult to deal the OHS patients (Eskes et al., 2020). A crucial component of family participation seemed to be physical proximity. It gave caregivers the impression that they were significantly improving the wellbeing of their loved ones. It wasn't excessively demanding on caregivers to ask families to take part in basic care activities during post-operative care (Bryson et al., 2014; Eskes et al., 2020; Ringborg et al., 2022). Participants experience alternation over their transit thoughts, emotions, and psychomotor behavior while facing OHS. When these changes in behavior happened temporarily, the OHS patients were coping with the situation easily. Whereas the changes in behavior are permanent, the participants might face difficulty in coping with the OHS stress.

In this study, the researcher used both data, and method triangulations. In data triangulation, information was collected from patients and caretakers. As part of the

triangulation process, this study was conducted using mixed methodologies (QUAN and QUAL). Triangulation can be used to saturate the data (Fusch & Ness, 2015) and improve the trustworthiness of the study outcomes (Stavros & Westberg, 2009).

Majorities of OHS patients have higher PWB, and moderate to effective coping skills, and almost all participants and caretakers trust god belief in prayer in their own style (Eskes et al., 2020). Though, coping is individualized (Parkes & Hughes, 2020), coping has been enhanced due to various activities such as praying to god, talking with the nearest one, and seeking relevant information (Aust et al., 2016).

In this study, hemodynamic status, 220 (51.89%) of patients' vital signs were normal without using medicine to increase blood pressure. Whereas, 300 (70.75%) of patients with OHS had experienced no incisional pain while collecting data, the remaining, 124 (29.25%) of patients had mild to severe incisional pain. There was an association between PWB and incisional pain statistically. Likewise, QUAL findings also support that the experiences of incisional pain make aggressive, and irritate the patients easily (Chen et al., 2023). Behavioral changes of the patients with OHS were influenced by the personality of the patients, the support system available, social environment, and the physical environment (incisional pain, irritation, financial burden, ICU environment, pathological condition) (Aust et al., 2016; Eskes et al., 2020; Ringborg et al., 2022; Chen et al., 2023).

Regarding the observation finding, almost all OHS patient's general appearance was normal, maintained eye contact during data collection, easy to develop rapport, and their body posture was guarded (protect the incisional site), 76.50% of OHS patient's social behavior seemed friendly, they talk with patients and caretaker admitted on nearby

bed. Whereas, one-fourth of the patients seemed aggressive, less than one-tenth of the patients seem isolated, remained quiet on the bed. Majority, 297 (70.05%) of OHS patients' facial expressions seem anxious as observed by researchers as well as the majority of patients seem anxious as mentioned by caretakers. These findings are similar to the study findings of Younes et al. (2019), and Booker and Haedtke (2016). The anxiety occurred in a substantial percentage of patients undergoing OHS, which can be noted through non-verbal communication.

The relationships between the patients and caretakers were open and intimate emotionally. Which explored the relevant information from the caretakers about the OHS patients. The changing pattern of behaviors started from seeking information (Fadhel & Adawi, 2020), experiencing stress, and decision-making for OHS experiencing peak levels of fear and anxiety, to gradually reducing stress levels (Younes et al., 2019).

5.2 Researcher's Reflection on the Study

The researcher developed comprehensive thoughts regarding PWBand coping with the surgical stress of the OHS patients admitted to the university hospital. It was an incredible experience for the researcher throughout the journey of writing this dissertation. Previously, researchers only had the experience of doing a quantitative study. This dissertation provided me the opportunity to gain insight into the mixed method study to know about the in-depth interview, tool validation, sample calculation, pilot study, ethical consideration, nature of data, and statistical and thematic analysis of the data.

The researcher gained in-depth knowledge in the field of health and psychology with the content matter. The dimension of my thinking was expansion from the perspective of health and psychology. The researcher's major subject is health psychology. Therefore, the issues or problems have been seen from the lens of health and psychology. Before starting this project, researcher experienced fear of selecting a topic under health psychology for the study of PWB, coping with surgical stress during OHS was almost impossible. However, the continuous support and guidance of professors from different universities make it possible. Prof. Dr. Tara Shah (Ph.D. on PWB of cancer patients) from BPKIHS Dharan, and Dr. Sabitri Stapit former professor from the Center Department of Psychology guided me in developing the concept of the subject matter.

Prof. Dr. Nandita Sharma from the Center Department of Psychology, and Prof. Dr. Mohan Raj Sharma (Neuro-Surgeon) from the Research Department of IOM continuously guided me throughout my Ph.D. journey from the areas of their expertise. Assoc. Prof. Dr. Anil Bhattrai (Cardio-thoracic-vascular Surgeon) from IOM, and Assoc. Prof. Dr. Suraj Shakya (Clinical Psychologist) from IOM also gave expert inputs from their respective subject areas. It was a delightful experience of learning for the researcher to have supervisors from multidisciplinary fields.

5.3 Conclusion

The majority of OHS patients have higher PWB and almost all patients used various effective coping strategies to cope with the OHS. OHS patients residing in the municipalities, males, those not have incisional pain, and those with age-appropriate physical built-up have higher PWB than those from the rural municipality, females, with

incisional pain, and age-inappropriate physical built-up. The PWB of OHS patients does not correlate with age, marital status, occupation, educational level, vital signs, oxygen saturation, and physical build-up according to body weight.

Married OHS patients and those whose vital signs were normal without inotropes were able to cope with the stress more effectively than those who were single or had unstable vital signs requiring inotropes (medicine used to increase blood pressure).

If the aggressive behavior of the patients was dictated before the surgery and peaked on the day of the operation, the stress gradually subsided after surgery, provided there were no postoperative unfavorable events. Likewise, caretakers experienced OHS as a very stressful event for patients and family members. The caretaker feels emotional pain to deal with OHS patients while they are struggling for life and death. Therefore, the experience of caretakers was difficult to deal with the OHS patients.

In general, participants experience alternation over their transit thought, emotion, and psychomotor behavior while facing OHS. Temporary behavior changes result in easy coping. However, permanent behavior changes result in difficulty in coping with the OHS.

5.4 Limitations of the Study

No study is flawless in every way. Single study cannot cover all aspects of the particular problem. Methodological and practical shortcomings also keep the meaning of research findings. Limitations of the study also indicate the boundary to generalize findings to the other population.

This study was limited to patients admitted to a single referral center in Kathmandu. It was not possible to determine the causal association between the variables because a cross-sectional descriptive methodology was employed. Being a referral center many patients had significant co-morbidities. This study may not accurately reflect the patient population during regular times because it was carried out during the COVID-19 pandemic.

This study only explores the experiences of caretakers of OHS patients. OHS patient's experiences were not explored. Only quantitative data was taken from OHS patients because the magnitude of the study might be too large if explores the experiences of patients and caretakers. This study also interpreted the extrovert and introvert OHS patient's nature from the perception of caretakers.

5.5 Implications of the Study

More than 25% of OHS patient's PWB is still lower than average, and 9.4% of them have ineffective coping. Therefore, priority should be given to those OHS patients by the healthcare personnel (nurses, doctors, paramedics, and clinical psychologists), hospital administration, scholars, academicians, and the Ministry of Health.

Health personnel should communicate and counsel the OHS patients pre-operatively in a systematic manner. Pre-operative counseling should be given by clinical psychologists, especially to females, patients from rural areas, patients with incisional pain, malnourished patients, and those who are single. Scholars should further conduct research regarding the factors determining the coping and PWB of females, patients from rural areas, malnourished patients, and single patients.

Hospital administration can use this finding to develop the hospital policy and strategy regarding service delivery to OHS patients. They should recruit a clinical psychologist to counsel the OHS patient, allocate a minimum service standard counseling room, and improvise the service delivery mechanism, especially for patients from rural municipalities, female, activation of the pain management protocol. In medical education, the curriculum should be revised, and increased credit hours on communication and counseling focused on practical rather than theory. The Ministry of Health should develop a standard policy regarding the planning and implementation of healthcare-related activities for OHS patients in the hospitals.

5.6 Contribution to Knowledge

The present study revealed the body of knowledge about the PWB and coping status of OHS patients admitted to the hospital after the operation in an area where information is dearth. It also identified the association of sociodemographic variables, hemodynamic variables, relations among the domains of PWB and coping with OHS stress, the predictors of PWB, and explored the caretaker's experience. The finding focused especially those institutionalized people, where scientific information is very crucial for the management of their issues.

5.7 Recommendations

The following suggestions are offered in light of the constraints and findings:

Though a significant reasonable level of PWB was found, more than 25% of patients still had less than the desired level of PWB. Therefore the services provided by the hospitals should be further strengthened in this regard. Maintaining the quality of care in the

hospital is recommended to sustain the already effective coping mechanism as found in this study.

While delivering the services to the OHS female patients, those who experience incisional pain, those receiving inotropes, and patients from rural areas healthcare providers should be more sensitive while providing care to them because their PWB was on the lower side and coping was ineffective than male patients, with no incisional pain, not receiving inotropes, and patients from municipalities.

Causative factors for PWB and influencing factors for coping can further be explored through analytical studies by scholars. Likewise, caretakers, stakeholders, and policymakers should provide priority to female patients, unmarried patients, those having incisional pain, patients living in rural municipalities, and no age-appropriate physique to develop a better environment and effective coping with psychologically healthy individuals.

Hospital management can develop the protocol regarding the counseling of the patient in the counseling room by a health/clinical psychologist to support the patients psychologically for the enhancement of coping with the OHS treatment modality.

Last but not least, caretakers experience OHS as a very stressful event for patients and family members. The mental health of the caretaker can be focused on by providing space, and counseling facilities for them and further comparative study can be done on those counsel and non-counsel caretakers by the scholar.

5.8 Summary of the Study

The present study revealed the PWB and coping status of OHS patients admitted to the hospital after the operation. It also identified the association of sociodemographic variables, hemodynamic variables, relations among the domains of PWB and coping with OHS stress, the effect of PWB, and explored the caretaker's experience. Ryff's PWB scale was used to collect the data for PWB from OHS patients, which is a standard tool. Likewise, the coping with OHS stress tool was used to collect data for coping with OHS stress. PWB and coping with OHS stress reliability score was 0.913 and 0.841 respectively for the present study.

Vital signs were measured, and general appearance and behavior from the mental status examination were observed to find out the patient's condition, develop interpersonal relationships, and identify whether the OHS patients met the inclusion criteria for this study. Four hundreds twenty four OHS patients admitted to MCVTC were included in this study. Majorities of the patient's PWB was higher and coping with OHS stress was moderate to effective. The identified coping strategies were reflection, reassurance, belief and support, religious, and acceptance. OHS is one of the major surgeries, and patients as well as caretakers experience very difficulty coping with the situation, however, available support (financial, spiritual, physical, and emotional) system makes the situation easier to cope with OHS stress.

In this study, the researcher assesses the PWB and coping of the patients after OHS. This study generated evidence of the PWB and coping strategies of patients with OHS admitted to a tertiary care hospital. The study findings could be useful for health personnel (nurses, doctors, paramedics, clinical psychologists, etc.), scholars,

professionals working on the welfare of an individual with OHS, family members and caretakers, and hospital management.

Health personnel would benefit by understanding the findings of patient's PWB and coping strategies after OHS. This study might be beneficial for scholars to generate the research question for further exploration in this area. Professionals could use these study findings for academic and clinical purposes to provide quality care. The hospital administration can use the study findings to plan hospital services for patients with OHS. It might also be helpful for the policymakers and stakeholders to plan and implement strategies accordingly.

APPENDICES

APPENDIX- A

INFORMED CONSENT FORM FOR QUANTITATIVE STUDY

Title: Psychological Well-being and Coping with the Surgical Stress of the Patients after Open Heart Surgery

Self-Introduction

Namaste, I am Pratima Khatri, a student of Tribhuvan University, the Office of Dean, Faculty of Humanities and Social Science, Central Department of Psychology, Kirtipur, Nepal. I am here for a research study being conducted as a partial fulfillment of my Ph.D. in Psychology. This research proposal has been approved by the Research Committee from the Central Department of Psychology, the office of the Dean, the Faculty of Humanities and Social Science, and ethical clearance from the Institutional Review Committee (IRC) of the Institution of Medicine. This study involves no foreseeable harm or risks to you. You will be contributing to this study by telling about your experiences and opinions. You will be asked some questions which you will have to answer as per what you feel about them. The researcher will note down your response in the tool. It will take around 25-40 minutes to fill out the form. Your valuable answers will help to find out the psychological well-being (PWB) and coping with surgical stress of the patients after open heart surgery (OHS).

The purpose of this study is to explore the PWB and coping with surgical stress of patients after OHS. The result of this study will contribute to knowledge in the field of PWB and coping with surgical stress of patients after OHS.

I would like to inform you that your participation in this study is voluntary and you have full right to withdraw from the study at any time you want without fear and

giving any reasons. All the information given by you will be kept confidential and will be used only for study purposes. Your identification will not be disclosed to anyone. I hope you will participate in this study by providing your authentic response to the questions.

If you have questions about the study or you are interested in participating, please contact me by mobile at 9849838628 or email at *pratimakhatri45@gmail.com*

Sincerely yours

Pratima Khatri

If you are willing to participate in this study, please sign below.

Participant's Agreement

In signing this consent form, I state that I have read this document completely, and I understand its content and purpose and my participation in the study is voluntary. I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. I have no questions regarding the procedure and my questions have been answered to my satisfaction. I hereby have permission to enroll me as a participant. By signing this form I have not waived any of my legal rights in a research study.

_____	_____
Participant's Signature/ Thumb Print	Researcher's Signature
Name:	Name:
Date:	Date:

APPENDIX B

INFORMED WRITTEN CONSENT LETTER FOR INTERVIEW OF THE CARETAKERS

Title: Psychological Well-being and Coping with the Surgical Stress of the Patients after Open Heart Surgery.

Self-Introduction

Namaste, I am Pratima Khatri, a student of Tribhuvan University, the Office of Dean, Faculty of Humanities and Social Science, Central Department of Psychology, Kirtipur, Nepal. I am here for a research study being conducted as a partial fulfillment of my Ph.D. in Psychology. This research proposal has been approved by the Research Committee from the Central Department of Psychology, the office of the Dean, the Faculty of Humanities and Social Science, and ethical clearance from the Institutional Review Committee (IRC) of the Institute of Medicine. This study involves no foreseeable harm or risks to you and your patient. If you agree to be one of 5-6 study participants, you have to share your experiences and feelings in an interview conversation while caring for your patient with OHS. The interview will take around 10-20 minutes. There is the possibility that I will want to talk with you a second and third time to clarify some of your answers. I will be taping the interview session because I don't want to miss any of your information, although I will be taking some notes during the session and I will transcribe the tapes.

All the information you provide will be kept confidential, this means that your interview response will not be shared with anyone. I will take rigorous measures to maintain your privacy and total confidentiality of the information in the following ways:

your name, contact information, and patient's identity will not be used in the study report. The information will be coded. Information linking you and your code will be hand-written and kept in one separate locker location, accessible only to me or my dissertation advisors, Prof. Dr. Nandita Sharma and Prof. Dr. Mohan Raj Sharma. This information will be removed from the audio tape transcriptions. In addition to me, the only person who will have access to the full transcription records of the interviews will be my dissertation advisor. All interview recordings will be kept in a locked, secured place and will be destroyed after completion of the dissertation. I may keep written transcriptions of the interviews for my use in publications and presentations. These transcriptions will be used only in the form of coded information.

You do not have to answer any questions that you do not want to answer. You can stop the interview at any point and withdraw from the study if you do not want to continue it. Also, all your identifying information, such as name, the name of your patient, and the location you live in, will be edited out during the transcription of the tape recording. In the interview, you will be asked about the experience and changing behavior of your patients while caring for them before, during, and after OHS. There is a possibility that this may cause you to recall distressing situations. If you suffer some adverse response as a result of participating in this study please contact me at the telephone number and or email address below.

Your participation in this study is voluntary and you will not be paid for your participation. If you decide not to take part in the study, or if you decide to stop participating at any time, you will not be penalized in any way and all of your contact information and any audio-taped recording will be destroyed. It is hoped that the

information I gain from this study will provide important information for nursing professionals and will contribute to enhancing the dignity of the nursing profession with quality care and client satisfaction.

Remember, you have the liberty to discontinue the interview or leave to take part in this study at any time without penalty. If you have questions about the study or you are interested in participating, please contact me by mobile at 9849838628 or email at *pratimakhatri45@gmail.com*

Sincerely yours

Pratima Khatri

If you are willing to participate in this study, please sign below.

Participant's Agreement

In signing this consent form, I state that I have read this document completely I understand its content and purpose and my participation in the study is voluntary. I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. I have no questions regarding the procedure and my questions have been answered to my satisfaction. I hereby have permission to enroll me as a participant. By signing this form I have not waived any of my legal rights in a research study.

_____	_____
Participant's Signature/ Thumb Print	Researcher's Signature
Name:	Name:
Date:	Date:

APPENDIX- C

DATA COLLECTION TOOL

Code no:_____

Part One: Socio-demographic Data

Please, kindly fill in the answers to these questions.

S.N	Items	Options	Code
1.	How old are you?	_____	S1
2.	What is your sex?	1. Female 2. Male	S2
3.	Where are you living?	1. Urban municipality 2. Rural municipality 3.other_____	S3
4.	What is your marital status?	1. Unmarried 2. Married 3. Legally separated 4. Separated 5. Widow/Widower	S4
5.	What is your religion?	1. Hindu 2. Buddhist 3. Christian 4. Muslim	S5
6.	What is your education status?	1. Illiterate 2. Can read and write 3. Primary level 4. Secondary Level 5. Bachelor Level 6. Master Level 7. Ph.D. Level	S6
7.	Daily physical activities?	1. Not even 30 minutes per day 2. 30 minutes 3. 30 minutes to 1 hour 4. 1 hour to 2 hours 5. > 2 hours	S7
8.	Which is the type of your family?	1. Nuclear Family 2. Joint Family	S8

		3. Extended Family	
9.	Who is your caretaker in the hospital?	_____	S9
10.	Who is your caretaker in the home?	_____	S10
11.	Who pays your service fee in this hospital?	1. Out-of-pocket payment 2. Health Insurance 3. Nepal government 4.other_____	S11
12.	What is the reason for your open heart surgery?	_____	S12

Part Two: Psychological Well-being Scale

Please indicate tick (√) your degree of agreement (using a score ranging from 1-7) in the following sentences. No options are supposed to be right and wrong, therefore, kindly respond to what you often feel.

Where,

1: Strongly disagree, 2: Disagree, 3: Somehow disagree, 4: Undecided, 5: Somehow agree, 6: Agree, 7: Strongly agree

SN	Items	1	2	3	4	5	6	7	Code
1.	I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.								P1
2.	For me, life has been a continuous process of learning, changing, and growth.								P2
3.	In general, I feel I am in charge of the situation in which I live.								P3
4.	People would describe me as a giving person, willing to share my time with others.								P4
5.	I am not interested in activities that will expand my horizons.								P5
6.	I enjoy making plans for the future and working to make them a reality.								P6
7.	Most people see me as loving and affectionate.								P7

8.	In many ways, I feel disappointed about my achievements in life.								P8
9.	I live life one day at a time and don't think about the future.								P9
10.	I tend to worry about what other people think of me.								P10
11.	When I look at the story of my life, I am pleased with how things have turned out.								P11
12.	I have difficulty arranging my life in a way that is satisfying to me.								P12
13.	My decisions are not usually influenced by what everyone else is doing.								P13
14.	I gave up trying to make big improvements or changes in my life a long time ago.								P14
15.	The demands of everyday life often get me down.								P15
16.	I have not experienced many warm and trusting relationships with others.								P16
17.	I think it is important to have new experiences that challenge how you think about yourself and the world.								P17
18.	Maintaining close relationships has been difficult and frustrating for me.								P18
19.	My attitude towards myself is probably not as positive as most people feel about themselves.								P19
20.	I have a sense of direction and purpose in life.								P20
21.	I judge myself by what I think is important, not by the values of what others think is important.								P21
22.	In general, I feel confident and positive about myself.								P22
23.	I have been able to build a living environment and a lifestyle for myself that is much to my liking.								P23
24.	I tend to be influenced by people with strong opinions.								P24
25.	I do not enjoy being in new situations that require me to change my old familiar ways of doing things.								P25
26.	I do not fit very well with the people and the community around me.								P26
27.	I know that I can trust my friends, and they know they can trust me.								P27

28.	When I think about it, I haven't improved much as a person over the years.								P28
29.	Some people wander aimlessly through life, but I am not one of them.								P29
30.	I often feel lonely because I have few close friends with whom to share my concerns.								P30
31.	When I compare myself to friends and acquaintances, it makes me feel good about who I am.								P31
32.	I don't have a good sense of what it is I'm trying to accomplish in life.								P32
33.	I sometimes feel as if I've done all there is to do in life.								P33
34.	I feel like many of the people I know have gotten more out of life than I have.								P34
35.	I have confidence in my opinions, even if they are contrary to the general consensus.								P35
36.	I am quite good at managing the many responsibilities of my daily life.								P36
37.	I have the sense that I have developed a lot as a person over time.								P37
38.	I enjoy personal and mutual conversations with family members and friends.								P38
39.	My daily activities often seem trivial and unimportant to me.								P39
40.	I like most parts of my personality.								P40
41.	It's difficult for me to voice my own opinions on controversial matters.								P41
42.	I often feel overwhelmed by my responsibilities.								P42

Part Three: Coping with the Surgical Stress Scale

Please indicate tick (√) your degree of agreement (using a score ranging from 1-4) in the following sentences. No options are supposed to be right and wrong therefore, kindly respond to what you often feel.

Where,

1: Never, 2: Sometimes, 3: Always, 4: Almost all times

S.N	Items	1	2	3	4	Code
1.	I reassure myself that I trust the doctors and nurses who examine me and perform open heart surgery.					C1
2.	I remind myself that others are facing the same problems as me.					C2
3.	I reassure myself that everything will be fine after the open heart surgery.					C3
4.	I remind myself that I have faced much more stressful situations before.					C4
5.	I tell myself that some individual have had successful open heart surgery.					C5
6.	I tell myself, I'm not in the worse situation as others.					C6
7.	I reflect on the support I'm getting for the open heart surgery in the hospital.					C7
8.	I wonder about the possible complication of open heart surgery.					C8
9.	If the open heart surgery is not successful, I imagine my life will be over.					C9
10.	I try to think of everything about open heart surgery.					C10
11.	I try to see the positive side of open heart surgery.					C11
12.	I informed myself about all the advantages and disadvantages of the open heart surgery.					C12
13.	I have a lot of questions for the doctors regarding open heart surgery.					C13
14.	I chat to people in an effort to boost my confidence.					C14
15.	I hope for the comfort and support of the family regarding my treatment.					C15
16.	I discuss open heart surgery with friends who are medical professionals.					C16
17.	I sleep a lot even after open heart surgery.					C17
18.	I read books and magazines about heart disease and treatment.					C18
19.	I consider my friends' negative experiences with open heart surgery.					C19
20.	I believe in God and praying.					C20

Part Four: Patient's Observation and Questions for Caretaker's Interview

In this portion, for section A, the researcher would observe all the information listed below and tick (√) the appropriate response to be observed. For section B, the researcher interviewed the caretaker about the changing behavior of the patient at admission, before the operation, and after the operation.

Section A: Patients' Observation Sheet			
SN	**Observation**		**Code**
1.	Vital Signs	1. Normal with Inotropes 2. Normal without Inotropes 3. Abnormal with Inotropes 4. Abnormal without Inotropes	O1
a.	Blood Pressure	1. High 2. Normal 3. Low	O1a
b.	Pulse Rate	1. High 2. Normal 3. Low	O1b
c.	Respiratory Rate	1. High 2. Normal 3. Low	O1c
d.	Temperature	1. High 2. Normal 3. Low	O1d
e.	Pain	1. Strong Pain 2. Moderate Pain 3. Mild Pain 4. No Pain	O1e
2.	General Appearance and Behavior (GAAB)	1. Normal 2. Abnormal	O2
a.	Facial Expression	1. Anxiety 2. Pleasant 3. Confident 4. Normal	O2a
b.	Body Posture	1. Stiff 2. Guarded 3. Normal	O2b
c.	Mannerism	1. Stereotype 2. Negativism 3. Tics 4. Normal	O2c
d.	Eye to Eye Contact	1. Maintained 2. Not Maintain	O2d

e.	Rapport Build	1. Easily Build 2. Difficult to Build	O2e
f.	Social Behavior	1. Friendly 2. Isolated 3. Aggressive 4. Normal	O2f
g.	Dressed-up	1. Appropriated to Season 2. Not appropriated to Season	O2g
h.	Grooming	1. Neat and Tidy 2. Dirty	O2h
i.	Physical Features Ia. According to Weight Ib. According to Age	1. Under-weight 2. Over-weight 3. Normal BMI_____ 1. Younger for Age 2. Older for Age 3. Look appropriate for Age	 O2ia O2ib
Section B: Care Taker's Interview Items			
1.	Today is which post-operative day?	_____	I1
2.	How is his/her condition now?	_____ _____ _____	I2
3.	Nowadays what type of matters that patients talk to you usually?	_____ _____ _____	I3
4.	How is your relationship with the patient?	_____ _____ _____	14
5. a. b. c.	How was the behavior of the patient: At the time of admission On the day of the operation after the operation	1_____ _____ 2. _____ _____ 3. _____ _____	15 I5a I5b I5c

*****THANK YOU*****

APPENDIX- D

संख्यात्मक अनुसन्धान

सु-सुचित मन्जुरीनामा फाराम बिरामीको लागि

नमस्कार,

म **प्रतिमा खत्री** अनुसन्धानकर्ता, त्रिभुवन विश्वविद्यालय डिनको कार्यालय, मानविकी तथा समाजिक शास्त्र संकाय कीर्तिपुरमा मनोविज्ञान विषयको विधावारिधि तहमा अध्ययनरत विद्यार्थी हुँ । म **"मुटुको शल्यकृया गरेका बिरामीहरुको मनोवैज्ञानिक शु-स्वास्थ्य तथा मुटुको शल्यकृया-तनाव सामना मापन"** सम्बन्धि शिर्षकमा अनुसन्धानका लागि उपस्थित भएको छु । मुटुको बिभिन्न रोग भएर अस्पतालमा शल्यकृया गरी उपचार गरिरहनु भएका बिरामीहरुको मनोवैज्ञानिक सु-स्वास्थ्य र तनाव सामना कस्तो रहेछ, भन्ने कुरा पत्ता लगााउनु यस अनुसन्धानको मुख्य उद्देश्य रहेको छ ।

यो अनुसन्धान स्वास्थ्य मनोविज्ञान विषयको विधावारिधि तहको आंशिक आवश्यकता पूरा गर्नको लागि गरिन लागिएको हो । यस अनुसन्धानबाट तपाईंलाई कुनै पनि क्षति हुने छैन । तपाईलाई अनुसन्धानकर्ताबाट केहि प्रश्नहरु सोधिने छ र तपाईंले भनेका जवाफहरु फारममा लेखिने छ । यसका लागि तपाईंले २५ देखि ४० मिनेट समय दिनुपर्नेछन् । यस अध्ययनमा तपाईको सहभागिता तपाईको ईच्छा भए मात्र गरिनेछ । तपाईलाई बिचमा उत्तर दिन मन नलागे कर गर्ने छैन । तपाईले दिएका जानकारीहरु गोप्य राखिनेछ र अध्ययन तथा अनुसन्धानको लागिमात्र प्रयोग गरिनेछ । तपाईको नाम कतै उल्लेख गरिनेछैन ।

तपाईले दिएको जानकारी म अनुसन्धानकर्ता र अनुसन्धानकताको गुरुले मात्र अध्ययनको लागि अध्ययन गर्नेछौं । साथै तपाईले दिएको जानकारी सुरक्षित छुट्टै चाबी र ताल्चा लगाएर राखिनेछ । अध्ययन सकिएपछि हटाईनेछ । तर तपाईले दिएको जानकारी अध्ययनको शिलशिलामा

प्रस्तुति दिन पर्यो भने तपाईको परिचय नखुल्ने गरि प्रयोग गरिनेछ । तपाईले दिएको जानकारीले तपाई जस्ता बिरामीसंग कसरी कुराकानी गर्नु पर्दछ, कस्तो ब्यबहार आवश्यकत पर्दछ, कस्तो खालको सुविधा आवश्यक पर्दछ, र कस्तो सेवा आवश्यकत पर्दछ, भन्ने जस्ता कुराहरु अस्पतालका कर्मचारीहरु, स्याहार सुसार गर्ने ब्याक्तिहरु, समाजसेवीहरु लगायत यस अस्पताल प्रशासनलाई समेत जानकारी हुनेछ । जसले गर्दा सेवामा राम्रो परिवर्तन ल्याउनमा केहि भुमिका खेल्न सक्नेछ ।

यदि तपाईसंग यस अध्ययन बारे कुनै प्रश्न भए तपाईले कुनै पनि बेला निसंकोच तलको मोबाईल नम्बर तथा ई-मेलमा सोध्न सक्नुहुनेछ ।

मोबाईल नम्बरः ९८४९८३८६२८

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मन्जुरीनामा

मैले यस मन्जुरीनामामा भएका सबै कुरा बुझेको छु । मैले मेरा सबै प्रश्नहरुको चित्त बुझ्दो उत्तर पाईसकेको छु । त्यसैले यस अनुसन्धानमा म सहभागी हुन ईच्छुक छु किनकी मलाई अहिले अनुसन्धानकर्ता लाई सोध्न प्रश्न बांकी छैन । यदि निकट भविष्यमा प्रश्न सोध्न पर्यो भने अनुसन्धानकर्ताको मोबाईल वा ई-मेलमा सोध्न सक्नेछु, त्यसैले यो मञ्जुरीनामामा पुरा होसमा सहिछाप गर्दछु ।

सहभागिको हस्ताक्षर .....

मिति.....

अनुसन्धानकर्ताको हस्ताक्षर .....

मिति.....

APPENDIX- E

गुणात्मक अनुसन्धान

सु-सुचित मन्जुरीनामा फाराम बिरामी कुरुवाहरुको लागि

नमस्कार,

म **प्रतिमा खत्री** अनुसन्धानकर्ता, त्रिभुवन विश्वविद्यालय डिनको कार्यालय, मानविकी तथा समाजिक शास्त्र संकाय कीर्तिपुरमा मनोविज्ञान विषयको विधावारिधि तहमा अध्ययनरत विद्यार्थी हुँ । म **"मुटुको शल्यकृया गरेका बिरामीहरुको मनोवैज्ञानिक शु-स्वास्थ्य तथा मुटुको शल्यकृया-तनाव सामना मापन"** सम्बन्धि शिर्षकमा अनुसन्धानका लागि उपस्थित भएको छु । मुटुको बिभिन्न रोग भएर अस्पतालमा शल्यकृया गरी उपचार गरिरहनु भएका बिरामीहरुको मनोवैज्ञानिक सु-स्वास्थ्य र तनाव सामना कस्तो रहेछ, भन्ने कुरा पत्ता लगााउनु यस अनुसन्धानको मुख्य उद्देश्य रहेको छ ।

यो अनुसन्धान स्वास्थ्य मनोविज्ञान विषयको विधावारिधि तहको आंशिक आवश्यकता पूरा गर्नको लागि गरिन लागिएको हो । यस अनुसन्धानबाट तपाईंलाई कुनै पनि क्षति हुने छैन । यो अध्ययनमा तपाई बिरामीको आफन्त (Caretaker at home and hospital) संग पनि कुराकानी गर्नु पर्ने हुन्छ, त्यसको लागि तपाई १ जना, ५-६ जनामा पर्न चाहेर मञ्जुर हुनु भयो भने मात्र अगाडि प्रश्नहरु सोधिनेछन् । तपाईलाई तपाईको बिरामीलाई स्याहार गरिरहदा शल्यकृया अगाडि, शल्यकृयाको समयमा, र शल्यकृया पछि उहांको ब्यवहारमा कस्ता किसिमका परिर्वतन आए र तपाईको अनुभव कस्तो भयो भन्ने बारे हुनेछन । यसको लागि तपाईको १० देखि २० मिनेट लाग्नेछ । तपाईले दिएको उत्तर र म अनुसन्धानकर्ताले बुझेको उत्तर मिल्यो वा मिलेन भनेर जांच्नको लागि कहिलेकांही २ देखि ३ पटकसम्म पनि हामी भेट्न पर्ने हुन सक्नेछ । तपाईसंग भएको कुराकानी टेप रेकडमा रेकड गरिनेछ र नोटबुकमा टिप्पणी पनि लिइनेछ, किनकि तपाईले दिनुभएको अमुल्य जानकारी कुनै पनि

खेर नजाओस् वा नविस्रियोस् । त्यो रेर्कड सुरक्षित राख्नुका साथै अध्ययनको लागि मात्र प्रयोग हुनेछ । अध्ययनको प्रतिवेदन तयार भएपछि रेर्कड हटाईनेछ ।

तपाईले दिएको जानकारीले तपाई जस्ता बिरामीसंग कसरी कुराकानी गर्नु पर्दछ, कस्तो व्यवहार आवश्यकत पर्दछ, कस्तो खालको सुविधा आवश्यक पर्दछ, र कस्तो सेवा आवश्यकत पर्दछ, भन्ने जस्ता कुराहरु अस्पतालका कर्मचारीहरु, स्याहार सुसार गर्ने ब्याक्तिहरु, समाजसेवीहरु लगायत यस अस्पताल प्रशासनलाई समेत जानकारी हुनेछ । जसले गर्दा सेवामा राम्रो परिवर्तन ल्याउनमा केहि भुमिका खेल्न सक्नेछ ।

यदि तपाईसंग यस अध्ययन बारे कुनै प्रश्न भए तपाईले कुनै पनि बेला निसंकोच तलको मोबाईल नम्बर तथा ई-मेलमा सोध्न सक्नुहुनेछ ।

मोबाईल नम्बरः ९८४९८३८६२८

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मन्जुरीनामा

मैले यस मन्जुरीनामामा भएका सबै कुरा बुझेको छु । मैले मेरा सबै प्रश्नहरुको चित्त बुझ्दो उत्तर पाईसकेको छु । त्यसैले यस अनुसन्धानमा म सहभागी हुन ईच्छुक छु किनकी मलाई अहिले अनुसन्धानकर्ता लाई सोध्न प्रश्न बांकी छैन । यदि निकट भविष्यमा प्रश्न सोध्न पर्यो भने अनुसन्धानकर्ताको मोबाईल वा ई-मेलमा सोध्न सक्नेछु, त्यसैले यो मञ्जुरीनामामा पुरा होसमा सहिछाप गर्दछु ।

सहभागिको हस्ताक्षर .....

मिति.....

अनुसन्धानकर्ताको हस्ताक्षर .....

मिति.....

APPENDIX F

तथाङ्क संकलन प्रश्नावली

भाग १

कोड नम्बर:.....

जनसांख्मिकिय सम्बन्धि जानकारीहरु

निर्देशन : कृपया, झर्को नमानिकन तलका प्रश्नहरुको उत्तर दिनुहोला । यहाँ कुनैपनि उत्तर सहि र गलत हुनेछैनन् । एउटाको लागि सहि उत्तर अर्काको लागि गलत हुनसक्छ, त्यसैले ढुक्क भएर जवाफ दिनुहोला ।

खण्ड 'क': जनसांख्मिकय जानकारीहरु			
क. सं	**प्रश्नहरु**	**बिकल्पहरु**	**कोड**
१.	तपाई कति बर्ष पुरा हुनुभयो ?	.....	Q1
२.	तपाई आफुलाई के भन्न रुचाउनु हुन्छ ?	१. महिला २. पुरुष ३. अन्य.....	Q2
३.	तपाई कहाँ बस्नु हुन्छ ?	१. नगरपालिका २. गाँऊपालिका ३. अन्य.....	Q3
४.	तपाईको वैवाहिक स्थिती के हो ?	१. अविवाहित २. विवाहित ३. कानूनी रुपमा अलगिएको ४. कानूनी रुपमा नअलगिएको तर छुट्टै बस्ने ५. विदवा, विदुर	Q4
५.	तपाई कुन धर्म मान्नु हुन्छ ?	१. हिन्दु २. बुद्ध ३. ईसाइ ४. इस्लाम ५. अन्य.....	Q5

६.	तपाईले कति पढ्नु भएको छ ?	१. निरक्षर २. साक्षर ३. प्राथमिक तह ४. माध्यामिक तह ५. स्नातक तह ६.स्नात्तकोतर तह ७. विधावारिधि	Q6
७.	दैनिक शारिरीक व्यायाम कति गर्नुहुन्छ ?	१. दिनमा ३० मिनेट पनि गर्दिन २. दिनमा ३० मिनेट ३. दिनमा ३० मिनेट देखि १ घण्टा ४.दिनमा १ घण्टा देखि २ घण्टा ५. दिनमा २ घण्टा भन्दा धेरै	Q7
८.	तपाईको परिवार कुन किसिमको छ ?	१. एकल परिवार २. संयुक्त परिवार ३. बृहत परिवार	Q8
९.	अस्पतालमा तपाईको स्याहार कस्ले गरिरहेको छ ?	.....	Q9
१०.	घरमा तपाईको स्याहार कस्ले गरिरहेको छ ?	.....	Q10
११.	तपाईको उपचार खर्च कस्ले तिर्छ वा व्यहोर्छ ?	१. आफ्नै खल्तीबाट २. स्वास्थ्यबिमाले ३.नेपाल सरकारले ४. अन्य.....	Q11
१२.	तपाईको मुटुको अपरेसन गर्नुको कारण के हो ?	.....	Q12

भाग २

मनोवैज्ञानिक सु-स्वास्थ्य मापन

निर्देशन : कृपया, तल दिइएका वाक्यहरु ध्यान दिएर पढ्नुहोस र आफूलाई उपयुक्त लाग्ने कोठामा ठिक (√) चिन्ह लगाउनुहोस । यहाँ भएका उत्तर सही वा गलत भन्ने छैनन्, त्यसैले निस्फ्रिकी भएर आफुले बारम्बार महसुस गरिरहने कुरामा ठिक चिन्ह लगाउनु होला ।

क. सं.	मनोवैज्ञानिक सु-स्वास्थ्य मापनका भनाईहरु	पुरै असहमत (१)	केहि हदसम्म असहमत (२)	थोरै असहमत (३)	नत सहमत नत असहमत (४)	थोरै सहमत (५)	केहि हदसम्म सहमत (६)	पुरै सहमत (७)	कोड
१.	मेरो सोच अरुसंग नमिलेता पनि म आफ्नो भनाई राख्न डराउँदिन ।								P1

२	मेरो लागि जीवन भनेको सिक्ने, बदलिने र विकासको नियमित प्रकृया हो ।								P2
३	मेरो वरपरको अवस्था मैलेनै भनेजस्तो छ ।								P3
४	अरुले मलाई मान्छेहरुको सेवा गर्ने ब्यात्तिको रुपमा चिन्दछन् ।								P4
५	मलाई आफ्नो प्रगति हुने कामहरु गर्न मन पर्दैन ।								P5
६	मलाई आफनो भविष्यको लागि योजना बनाएर काम गर्न रमाईलो लाग्दछ ।								P6
७	धेरै जसो मानिसहरु मलाई मायादया भएको ब्यात्तिका रुपमा हेर्दछन् ।								P7
८	मैले जीवनमा हासिल गर्न नसकेको धेरै कुरा देखेर असंतुष्ट छु ।								P8
९	म वर्तमानमा बाँच्ने गर्दछु , भविष्यको वारेमा त्यत्ति सोच्दिँन ।								P9
१०	अरुले मेरो वारेमा के सोच्दछ भनेर मलाई चिन्ता लाग्छ ।								P10
११	आफनो जीवनलाई फर्केर हेर्दा, त्यसमा म संतुष्ट छु ।								P11
१२	म आफैलाई चित्त बुझ्दो जीवन जिउन गाह्रो छ ।								P12
१३	अरुको व्यवहारले मेरा निर्णयहरु प्रभावित हुँदैनन् ।								P13
१४	मैले आफ्नो जीवन सुधार गर्न छोडिसके ।								P14
१५	दैनिक जीवनमा पुरा गर्नु पर्ने आवश्यकताहरु देखेर म निरास हुने गर्दछु ।								P15
१६	मैले अरुसंगको आत्मिय सम्बन्ध महसुस गर्न पाएको छैन।								P16
१७	जिवनको दर्शन बुझ्नको लागि पुरानो ज्ञान र नयाँ अनुभवको आवश्यक पर्छ ।								P17
१८	म अरुसँग धेरै नजिकको सम्बन्ध बनाउन सक्दिन ।								P18
१९	म आफुप्रति सकारात्मक सोच वा भाव राख्न सक्दिन ।								P19
२०	मेरो जीवनको उद्देश्यको बारेमा म जानकार छु ।								P20
२१	मैले आफनो मूल्यांकन अरुको मुल्य मान्यता भन्दा पनि आफ्नै किसिमले गर्दछु ।								P21

२२	म आफू प्रति विश्वस्त र सकारात्मक छु ।								P22
२३	आफनो ईच्छा अनुसारको जीवनशैली बनाउन र जिउन म सक्षम छु ।								P23
२४	प्रष्ट बिचार राख्ने व्याक्तिसंग म प्रभावित हुने गर्दछु ।								P24
२५	आफनो काम गर्ने शैली, परिवर्तन गर्नु पर्ने नयाँ अवस्था मलाई मन पर्दैन ।								P25
२६	मेरो वरिपरिका मानिसहरु र समुदायमा म राम्रोसँग घुलमिल हुन्सक्दिन ।								P26
२७	मलाई मेरा साथीहरुले विश्वास गर्दछन, त्यसैले उनीहरुलाई म विश्वास गर्दछु ।								P27
२८	पछिल्ला केहि वर्षमा मैले आफूलाई असल व्याक्ति बनाउन सकेको छैन ।								P28
२९	म जीवनमा उद्देश्य नभएर भौतारिरहने व्याक्तिहरु जस्तो होइन ।								P29
३०	मनका कुराहरु राख्न सक्ने साथीहरु कम भएकाले म एक्लो महसूस गर्दछु ।								P30
३१	म आफूलाई अरुसंग तुलना गर्दा आफनो बारेमा सन्तुष्ट महसुस गर्दछु ।								P31
३२	मैले जीवनमा प्राप्त गर्न प्रयास गरिरहेको कुरा मलाई राम्रोसँग थाहा छैन ।								P32
३३	कहिलेकाँही जीवनमा मैले गर्नुपर्ने सबै कुराहरु गरिसके जस्तो लाग्दछ ।								P33
३४	मैले चिनेका मानिसहरुले जीवनमा मैलेभन्दा बढी प्रगति गरेका छन् ।								P34
३५	अरुसँग मेल नखाएता पनि म आफनो विचार धारणामा विश्वस्त हुन्छु ।								P35
३६	म आफनो दैनिक जीवनका जिम्मेवारीहरु पूरा गर्न सक्षम छु ।								P36
३७	समयसँगै आफूमा धेरै विकास भएको छ भन्ने मलाई लाग्छ ।								P37
३८	म आफनो परिवार र साथीहरुसँग एक अर्काका व्याक्तिगत कुराकानी गर्न रमाउछु ।								P38
३९	मलाई मेरा दैनिक क्रियाकलापहरु प्राय महत्व नभएको जस्तो लाग्दछ ।								P39
४०	मलाई आफ्ना आचरणहरु/ बानीव्यहोरा धेरै मन पर्दछ ।								P40
४१	मलाई विवादीत विषयमा आफनो विचार राख्न गाह्रो लाग्छ ।								P41
४२	म प्राय आफनो उत्तरदायित्वहरु देखेर आत्तिन्छु ।								P42

भाग ३

मुटुको शल्यकृया-तनाव सामना मापन

निर्देशन : कृपया, तल दिइएका वाक्यहरु ध्यान दिएर पढ्नुहोस र आफूलाई उपयुक्त लाग्ने कोठामा ठिक (√) चिन्ह लगाउनुहोस । यहाँ भएका उत्तर सही वा गलत भन्ने छैनन्, त्यसैले निस्फ्रिकी भएर आफुले वारम्वार महसुस गरिरहने कुरामा ठिक चिन्ह लगाउनु होला ।

क्र.सं.	मुटुको शल्यकृया-तनाव सामना मापनका भनाईहरु	कहिले (१)	केहिले कांही (२)	प्राय (३)	सधै (४)	कोड
१	मलाई जांच्ने र मुटुको शल्यकृया गर्ने डाक्टर र नर्सलाई म विश्वास गर्दछु भनी चित्त बुझाउँछु ।					**C1**
२	अरुहरुले पनि मेरो जस्तै समस्याको सामना गरिरहेका छन भनी आफुलाई सम्झाउँछु ।					**C2**
३	मुटुको शल्यकृया पछि सबै ठिक हुन्छ भनी चित्त बुझाउछु ।					**C3**
४	मैले यो भन्दा पनि धेरै तनावपूर्ण अवस्था पहिलेनै सामना गरेको कुरा आफैलाई सम्झाउछु ।					**C4**
५	केहि अरु व्याक्तिहरुले यस्तो मुटुको शल्यकृया सफलताका साथ गराएर राम्रो भएको कुरा आफैलाई सम्झाउँछु ।					**C5**
६	अरुको अवस्था मेरो भन्दा पनि दयनिय छ भनेर आफूलाई सम्झाउछु ।					**C6**
७	म मुटुको शल्यकृया गर्दा अस्पतालमा पाउने सहयोगको बारेमा सोच्ने गर्दछु ।					**C7**
८	म मुटुको शल्यकृयाका सम्भावित असरका बारेमा सोच्दछु ।					**C8**
९	यदि मुटुको शल्यकृया सफल भएन भने, मेरो जिवन सकिन्छ भन्ने कल्पना गर्दछ ।					**C9**
१०	म मुटुको शल्यकृयाको बारेमा सम्पूर्ण कुरा सोच्ने कोसिश गर्दछु ।					**C10**
११	म मुटुको शल्यकृयाको सकारात्मक पाटोलाई हेर्ने कोशिस गर्दछु ।					**C11**
१२	मुटुको शल्यकृयाका सबै फाइदा र बेफाइदाका बारेमा आफुलाई जानकार राख्दछु ।					**C12**
१३	डाक्टरलाई मुटुको शल्यकृयाका बारेमा मेरा धेरै प्रश्नहरु हुने गर्दछु ।					**C13**
१४	अरुसंग बोलेर आफुलाई आंटिलो/बलियो बनाउन कोशिस गर्दछु ।					**C14**
१५	म मेरो उपचारको लागि परिवारको सहजता र साथको आस गर्दछ ।					**C15**
१६	म मुटुको शल्यकृया सम्बन्धि चिकित्सकिय ज्ञान भएको साथीसंग कुरा गर्दछु ।					**C16**

१७	मुटुको शल्यकृया भए पनि म धेरै सुत्छु ।					**C17**
१८	म मुटुको रोग र उपचार सम्बन्धि किताव तथा पत्रपत्रिकाहरु पढ्छु ।					**C18**
१९	मेरो साथिको मुटुको शल्यकृयाको नराम्रो अनुभवको बारेमा सोच्दछु ।					**C19**
२०	म भगवान तथा पाठपूजामा विश्वास गर्दछु ।					**C20**

भाग ४

विरामीको अवलोकन तथा कुरुवासंग सोध्ने प्रश्नहरु

खण्ड 'क' : विरामीको अवलोकन			
क.स.	**अवलोकन**	**अवलोकनको नतिजाहरु**	**कोड**
१.	बिरामिको Vital Signs	१) सामान्य आयोनोट्रप्स दिएर २) सामान्य आयोनोट्रप्स नदिएर ३) असामान्य आयोनोट्रप्स दिएर ४) असामान्य आयोनोट्रप्स नदिएर	O1
क.	रक्तचाप (Blood Pressure)	१) उच्च २) सामान्य ३) न्यून	O1a
ख.	नाडिको गति (Pulse)	१) तिव्र २) सामान्य ३) ढिलो	O1b
ग.	श्वासप्रश्वासको गति (Respiratory Rate)	१) तिव्र २) सामान्य ३) ढिलो	O1c
घ.	तापक्रम (Temperature)	१) उच्च २) सामान्य ३) न्यून	O1d
ङ	दुखाई (Pain)	१) उच्च दुखाई (सहन नसकिने) २) मध्यम दुखाई ३) सामान्य दुखाई ४) दुखाई छैन	O1e
च.	अक्सिजन स्याचुरेसन (SPO_2)	१) > ९५ % २) ९०-९४ % ३) < ८९ %	O1f
२.	बिरामिलाई सामान्यतया झट्ट हेर्दा (General Appearance and Behavior {GAAB})	१) सामान्य २) असामान्य	O2

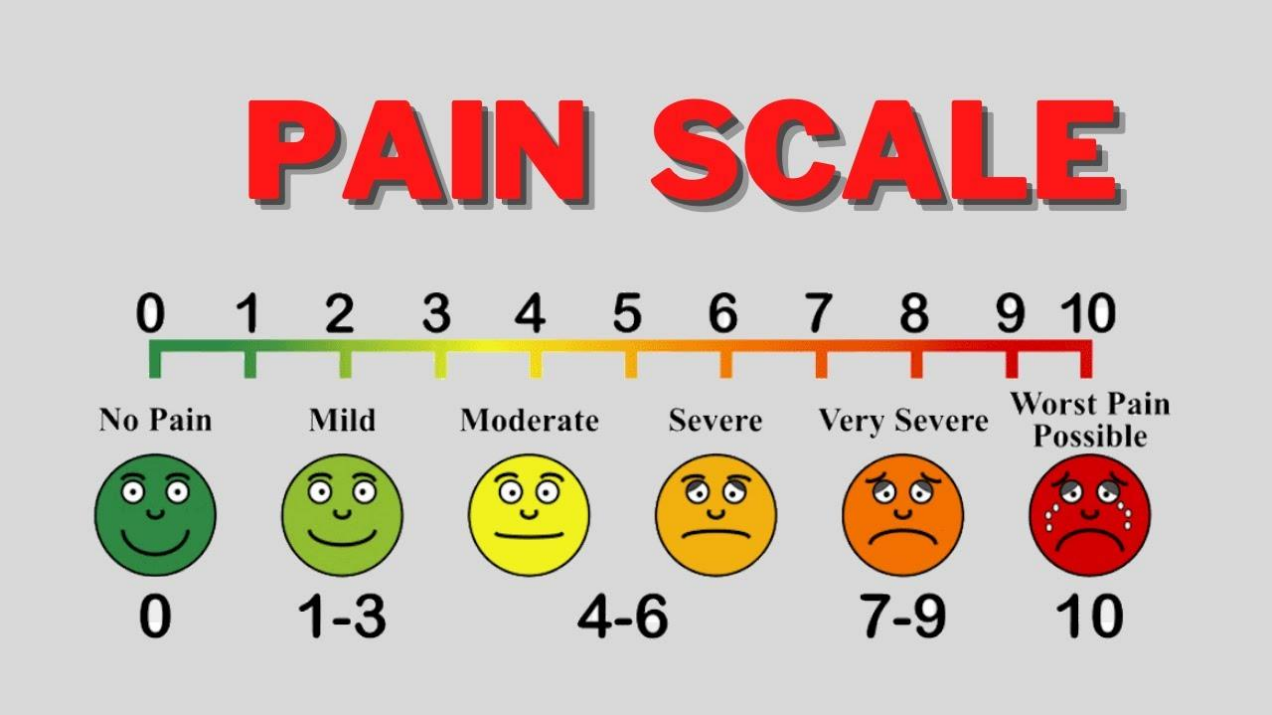
क.	अनुहारमा हेर्दा (Facial Expression)	१) डराएको २) खुसि ३) नडराएको ४) सन्तुष्ट	O2a
ख.	शरिरीक आसन (Body Posture)	१) हलचल नगरि बसेको २) कुनै अंगलाई संरक्षित गरेर बसेको ३) सामान्य गरि बसेको	O2b
ग.	व्यवहारवाद (Mannerism)	१)अरुको कुरा नसुन्ने २) नकारात्मक बुझ्ने ३) कुनै कुरा चलाईरहने ४) सामान्य	O2c
घ.	आँखामा हेरेर कुरा गर्नसक्ने (Eye to Eye Contact)	१) सक्ने २) नसक्ने	O2d
ङ	सम्बन्ध बनाउन (Rapport Build)	१) सजिलो २) गाह्रो	O2e
च.	सामाजिक व्यवहार (Social Behavior)	१) छिट्टै घुलमिल हुने २)घुलमिल हुन नसक्ने ३) सामान्य ४) छिट्टै उत्तेजित हुने	O2f
छ.	लवाई (Dressed-up)	१) सामान्य मौसम सुहाउदो २) असामान्य मौसम सुहाउदो नभएको	O2g
ज.	श्रृगांर (Grooming)	१) सफा २) फोहोरी	O2h
झ.	शारिरीक बनावट झ१. तौल बमोजिम झ२. उमेर बमोजिम	१) दुब्लो २) मोटो ३) सामान्य बि. एम. आई.(BMI)..... १) उमेर भन्दा जवान २) उमेर भन्दा बुढो ३) उमेर अनुसार	O2i O2ii
खण्ड 'ख': कुरुवासंग सोध्ने प्रश्न			
१.	विरामीको अप्रेसन गरेको आज कति औं दिन हो ?	.....	I1
२.	कस्तो छ उहाको अहिलेको अवस्था?	....	I2
३.	आजभोलि विरामीले तपाईसंग कस्ता खालका कुरा धेरै गर्नु हुन्छ?	....	I3

		.....	
४.	विरामीसंग तपाईको सम्बन्ध कस्तो छ ?	....	I4
५. क)	विरामीको ब्यवहार कस्तो थियो वा हुदैछ ? भर्नाको समयमा	....	I5 I5a
ख)	अपरेसनमा जान अगाडि	....	I5b
ग)	अपरेसन पछाडि	....	I5c

***** धन्यवाद *****

APPENDIX G

PAIN ASSESSMENT SCALE AND BMI FORMULA



The formula for the Calculation of Body Mass Index (BMI)

BMI: Weight in kgs/height in meter square

Reference Value of BMI

SN	Categories	WHO	Asia-Pacific
1.	Underweight	<18.5	<18.5
2.	Normal	18.5–24.9	18.5–22.9
3.	Overweight	25-29.9	23-24.9
4.	obese	≥30	≥25

Note: *In this study, the Asia-Pacific reference value of BMI was used because the participants were from Nepal as an Asian. The overweight and obese were merged as overweight.*

APPENDIX H

LIST OF PUBLICATION

Khatri, P. (2017). Need for clinical nurse specialist in Nepal. Review Article. *Journal of Nepal Nursing Council*, 11, 68-69. ISSN: 2392-4470

Khatri, P., & Sharma, M. R. (2018). Attitude of practicing nurses and nursing students toward the nursing profession in Nepal. *Journal of Institute of Medicine Nepal*, 40(1), 113-116.

Khatri, P., & Baniya, M. (2022) Importance of the bio-psychological model of health care practice in health care services. J*ournal of Karnali Academy of Health Sciences*,5(2). Retrieved from https://www.jkahs.org.np/jkahs/index.php/jkahs/article/view/635

Khatri, P., Munikar, A., Pandit, P., Rai, L., Maharjan, R. K., & Sharma, M. R. (2022). Etiology and demographic profile of medico-legal cases in emergency of a university hospital in Nepal. *Journal of Institute of Medicine Nepal*, 44(1), 68–71.

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APPENDIX I

LIST OF PARTICIPATION IN SCIENTIFIC CONFERENCES, WORKSHOPS AND TRAINING

IOM Academic Meet organized by Institute of Medicine, 9th July 2022. **(Presenter)**

Eighth National Summit of Health and Population Scientists in Nepal, 10-12th April 2022. Organized by NHRC, Ramshah Path, Kathmandu, Nepal. **(Presenter)**

Training of Trainers on EpiNurse Nepal, 15-17th December 2017. Organized by the Nursing Association of Nepal and Disaster Nursing Global Degree Leader jointly. (Participant)

Training of Trainers on the Covid-19 Vaccine, 20th May 2021. Organized by Project HOPE, the Center for Human Rights & Humanitarian Studies, Brown University, and the Pratiman-Neema Memorial Foundation.

Infection Prevention for two days from 21st to 23rd Sept. 2008 provided by Tribhuvan University Teaching Hospital (TUTH), Maharajgunj, Nepal. (Participant)

Skilled Birth Attendant (SBA) Training for two months from 26th May to 27th July 2013 Provided by the National Health Training Center (NHTC) at TUTH, Nepal. (Participant)

Participant Observer as a part of the clinical attachment from 23rd Nov. to 28th Dec 2014 in the Department of Psychiatry & Mental Health, TUTH. (Participant)

Three days of training in Lactation Management in Early postpartum, 2015 jointly organized by the Child Health Division/Nutrition Section and Helen Keller International. (Participant)

Training Workshop on "Scientific Writing" for three days with granted 12 credits hour on 14-16th Nov. 2016 provided by Nepal Health Research Council (NHRC), Ramshah Path Kathmandu, Nepal. (Participant)

Training Workshop on Health Research Proposal Development and Research Management for 10 days from 27th Nov. to 6th Dec. 2016 provided by NHRC Ramshah Path Kathmandu, Nepal. (Participant)

Training Workshop on Data management for 10 days starting from 3rd to 12th Jan 2017 provided by (NHRC), Ramshah Path Kathmandu, Nepal. (Participant)

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