



# ASSESSMENT OF STRESS AND COPING EXPERIENCED BY NURSES DURING COVID 19 PANDEMIC

Ms Amala p, Prof Mrs Sindhu Abraham, Vice – principal (HOD, Department of Medical Surgical Nursing), Prof. Dr. Kiruba. J.C Principal

MGM Muthoot College of Nursing

Kozhencherry,

Pathanamthitta District

Kerala

A descriptive study was done to assess the stress and coping experienced by nurses during Covid - 19 Pandemic in a selected hospital Pathanamthitta District with a view to prepare an information booklet. The objective of the study were to assess the level of stress and level of coping, find out the association between stress and coping of nurses with the selected baseline variables, and to find out the correlation between the stress and coping of the nurses. Descriptive design was used for the present study, Conceptual framework used for the study is Adaptation model by Sister Callista Roy. The main study was done among 120 nurses. The samples were selected using convenience sampling technique. Baseline assessment proforma and rating scales to assess the stress and coping were used as the tools for data collection. Descriptive and inferential statistics were used for data analysis. The study reveals that 42.5% of nurses were had severe stress, 45% of nurses had moderate stress and 12.5% had mild stress. The study reports that 56.7% of nurses had good coping, 30.8% of nurses had average coping and 12.5% had poor coping. Baseline variables like gender, having children, family income, designation and area of work were statistically associated with stress and baseline variables like age, having children, education status, designation, area of residence were statistically associated with coping. Spearman correlation coefficient shows a negative correlation between stress and coping and it indicate that as level of coping increases stress level of nurses decreases.

**Keywords:** Stress; Coping; Nurses; Covid 19.

## INTRODUCTION

### Background of the problem

Mental and physical health are equally important components of overall health.<sup>1</sup> Mental health is the foundation of

individual wellbeing, in which an individual realizes his or her own abilities, can cope with normal stressors of life, help to work productively and is able to make a contribution to his or her community.<sup>2</sup>

A person's mental health can change overtime, depending on many factors. When the demand place on a person exceeds their resources and coping abilities, their mental health could be impacted. for example, if someone is working long hours, having feelings of loneliness or isolation, experiencing medical conditions and adverse life experience<sup>1</sup>

Mental health affect how we think, feel and act. It also help to determine how we handle stress, relate to others and make choices. It can be explained as feeling of emotional and physical tension which arises from any event that threatens our homeostasis.<sup>3</sup>

Infectious pandemic and spread of organism across countries and continents have been facilitated by global changes to earth's climate. Covid 19, the infection caused by the novel corona virus, which has declared as pandemic by WHO on march 2020, has raisin concerns of widespread panic and increasing anxiety to individuals subjected to treat of virus. Not surprisingly, it has changed the image of our world with its circular impact on health, living tradition, economy and politics.<sup>4</sup>

The Covid 19 pandemic has heavily burdened, and in many cases overwhelmed healthcare systems. Since the breakout of Covid19, health care providers have faced multidimensional challenges in carrying out their professional duties and responsibilities.<sup>5</sup> It has been a constant emotional burden on the nurses who must learn how to treat patients with Covid 19 and what measures to take to avoid getting infected and infecting their family.<sup>25</sup> The responsibilities of nurses to the patients differ from other healthcare workers since they are the ones who spend more time directly caring for the patient. Not surprisingly, the sheer volume of confirmed or suspected patients, the risk of infection, overwhelming workload, physical exhaustion, and deficiency of specific drugs, which may dramatically contribute to deteriorative consequences for mental health .<sup>27</sup>

Health workers are working under pressure with long shift times and lack of personal protective equipment, in fear of transmitting the infection to their family and more than that risk of self exposure and infections and addition to that avoidance of community and lack of coping strategies also have negative effect on their mental health.<sup>7</sup>

While the medical community is expected to play an important role in such a situation, it is really facing difficulty with the burnout of health professionals.<sup>21</sup>The impact of the pandemic made the nurses to feel irritation, anger, lack of motivation, feeling helpless or powerless, feeling sad, depressed or overwhelmed, having difficulty in sleeping or concentrating, and feeling tired.<sup>10</sup>

A cross sectional study was conducted in April 2020, among the health workers from Mumbai, who were directly involved in the triage, screening, diagnosing and treatment of Covid patients and suspected. The study aimed to assess the prevalence and predictors of stress, depressive and anxiety symptoms among health workers. The tool used were Cohen's perceived stress scale and public health questionnaire and generalized anxiety disorder. Among the participants 50.9% belong to age group 18- 24yrs, 53.04% were males. Majority, 54% were staying in home. Most of them 47.3% were working in emergency department and 88.6% had experience for 10years and below.<sup>12</sup>The study reveals that 95% of nurses with high level trauma 3.75% had depressive symptoms and 11.4% were had anxiety symptoms. The study concludes that the high stress need treatment and anxiety symptoms requiring further evaluation.<sup>10</sup>

However, the pandemic demands a large-scale workforce based on the previous experience with the infectious disease outbreak. It is not difficult task for the nurse to face the situation, but it is not same for the new nurses. New nurses are in a transition stage from nursing graduates to actual nurses. They not only lack the professional knowledge and skills required for nursing practice, but also face difficulties in applying theoretical knowledge to actual work performance and as they experience stress due to difficulties in interpersonal relationship, burden and anxiety about work and lack of professional concept.<sup>21</sup>

Nurses who had worked intensively on the forefront during the pandemic had the fear of transmitting the infection to family. During this crisis, nurses have avoided going home to reduce the risk of infecting other people and their loved ones with the disease, and they have begun to live temporarily in places such as dormitories, hotels, and guest houses. There are mothers and fathers among these nurses. During the epidemic, both nurse parents and their children feel a longing for each other and wish to go back to pre- epidemic times.<sup>22</sup>

Additionally, negative mental outcomes have been aggravated by the media who informed about the pandemic and focused on death rates among healthcare workers and the disease spread in healthcare institutions, such massive

exposure to all kinds of information about Covid-19 implies a possibility of a massive traumatic incident with an unprecedented influence on mental health.<sup>33</sup>

Increasing one's workload can aggravate a person's stress levels, particularly during Covid pandemic. Nurses are more stressed than ever as they are faced with a highly contagious disease, however extreme job stress caused by job related demands can affect their overall work quality, poor mental health and functioning.<sup>13</sup>

A descriptive study was done among 110 nurses in a hospital, Wuhan during the period of March 2020. The aim of the study was to explore the current situation and influencing factors of job stress among nurses fighting Covid 19. A questionnaire was used and most of the study participants were females, 77% of age less than 30 years, most of them 81% are married, level of academic qualification, professional qualification all are impacted nurses to job stress. The study concludes that nursing leaders and hospital managers should pay attention to the impact of job stress on frontline nurses, while taking positive and effective measures aimed at eliminating the source of nursing work pressure to stabilize their nursing teams and promote their work in the fight against epidemic.<sup>13</sup>

The stress can cause unwillingness to work, reluctance to go to work, making mistakes, leaving work, poor quality of work, deterioration of relationships and cooperation with colleagues, making inaccurate decisions, and negative behaviours. The effects of work stress on the health sector may cause irrecoverable results.<sup>14</sup>

Nurses performance is an important factor in ensuring patient care, satisfaction, and it is directly related to the efficient, productive, and uninterrupted provision of healthcare. How nurses cope with the given challenges remains largely unknown.<sup>17</sup>

Coping refers to a cognitive and behavioral efforts that are constantly changing to master, reduce or tolerate a specific stressor appraised as exceeding one's available resources and abilities. Coping strategies are usually individualized and influenced by personal experiences, education levels and resources available for them in a social context. It involves adjusting to unusual demands, or stressors. This requires giving a greater effort and using greater energy than what's needed in the daily routines of life.<sup>17</sup>

A systematic review of 23 articles was done by international databases between November 2019 to July 2020. In this study they identified that the main coping mechanisms described were psychological support from relatives,



colleagues, institutions, and patients, also availability of continuing education and Personal Protective Equipment (PPE), spirituality and spending time for hobbies.<sup>16</sup>

Coping technique can be problem-focused, also called instrumental or emotion- focused. Problem-focused coping strategies are typically associated with methods of dealing with the problem in order to reduce stress, while emotion-focused mechanisms can help people handle any feelings of distress that result from the problem.<sup>17</sup>

Problem focused coping strategies which includes methods to deal with Covid 19 stigma. Practices commonly used by the health professionals are regulating exposure to news related to Covid 19, engaging in hobbies such as reading, watching movies and writing. Performing religious and spiritual practices like meditation, yoga. focusing one task at a time, resting and taking break at work, think positively, avoid overthinking about Covid, following healthy lifestyle like enjoying healthy food, hearing music. Measures which is used for the reducing the risk are continuing education, using personal protective equipment and engaging in infection control procedures.<sup>17</sup>

Emotion focused coping strategies include measures to handle the emotions, such as seeking support or talking to the colleges, supervisor, family members, friends or even the patients to share their experience.<sup>17</sup>

It is impossible to remove all stress from the work life of nurses. Therefore, it is important for nurses to find healthy ways to cope with work-related stress. The effectiveness of employees' coping techniques affect their health and well-being. A high level of self-efficacy can help nurses more effectively cope with work-related stress.<sup>20</sup>

### **Need and significance of the study**

Covid 19 is an emerged and easily clustered infectious disease. Because of the highly infectious nature of and limited knowledge about Covid 19, health workers were under extreme physical and psychological pressure. While on duty the nurse performs multiple responsibilities as manager, change agents and care provider especially in maladjusted coping strategies, by functional mental and emotional wellbeing.<sup>19</sup>

More than that the fear shared by the families, friends and neighbours of health care worker leads to disruption of interpersonal relationship which include another influencing factor for psychological morbidity among health care workers.<sup>24</sup> Under the heavy burden of Covid 19 crisis, nurse have been dedicated to working overtime, extra shifts, sleep disruption and work -life imbalance. which may result in a faster work phase and continuously higher

pressure. Poor mental health can mitigate cognitive performance, including the ability to engross and process information resulting in inadequate performance.<sup>24</sup>

A cross sectional study was conducted among the clinical and non-clinical health careworkers, who were directly or indirectly involved in patient care. The psychological impact were assessed in terms of four variables; insomnia, anxiety, depression and stress assessed by insomnia severity index, patient health questionnaire and perceived stress scale. Among the participants 64.5% were males and 35.35% were females. The majority of the age group were between 31 -40 years, 66.5% of respondents were married and 76% were found to have insomnia ,3.8% have severe clinical insomnia, and 6.7% have depression, 6.4% of had perceived stress respectively. The study concludes that measures to promote mental wellbeing in nurses; should be immediately implemented.<sup>10</sup>

A cross sectional study was conducted in Michigan on May 2020. During the study 18,300 nurse participated among 695 responded. The aim of the study was to explore perception of the salient sources of stress in early stages of the pandemic, 85 items questionnaire was developed by the research team. The study reveals that majority of the samples were females, 94.3%, approximately 18.1% of respondents were < 35 years of age, majority of were registered nurses 86.6%. Most of them work in inpatient department, 52.7% and 22.9% were working in outpatient setting. The study concluded that healthcare unit should provide an opportunity to express the stress, they are experiencing, support one another.<sup>11</sup>

The purpose of determining the impact of mental wellbeing, stress and coping strategies, among nurse is to help nurse to alleviate the overwhelming negative impact of the unforeseen and current pandemic on the psychological wellbeing of nurse. It can assist healthcare policymakers in prioritizing support system for the health care workers and maintain optimum public health during pandemic.<sup>27</sup>

When the Covid-19 response needs to place significant emphasis on the protection and well-being of health care workers. Further, little is known about the association between various coping mechanisms and nurses' mental health during the Covid-19 pandemic. Such knowledge could inform the adaptation and development of interventions to improve and sustain the psychological well-being of frontline nurses during the Covid-19 crisis.<sup>28</sup>

The responsibilities and challenges of nursing extend beyond these duties, however. from the physical risk of treating infectious diseases to the mental strain of providing constant emotional support, many of the most stressful

aspects of nursing are the least visible.

As a nurse educator, the investigator felt the need of assessing the stress and coping of nurses during Covid 19 pandemic as it is an increasing threat to health of nurse and to improve the quality in promoting care to patients.

## Statement of the problem

“A study to assess the Stress and Coping experienced by nurses during Covid-19 pandemic in the selected hospital, Pathanamthitta district with a view to prepare an Information booklet.”

## Objectives

1. To assess the level of Stress experienced by nurses during Covid-19 pandemic.
2. To assess the level of Coping experienced by nurses during Covid-19 pandemic.
3. To find out the correlation between Stress and Coping experienced by nurses during Covid-19 pandemic.
4. To find out the association between Stress and selected baseline variables of nurses.
5. To find out the association between Coping and selected baseline variables of nurses.

## Operational definitions

1. **Stress** : In this study, stress refers to a state of mental or emotional strain experienced by the nurses during COVID-19 pandemic, which is directly related to fear of social isolation, discomfort caused by protective equipment, difficulties and anxieties related to infection control and burden of caring for patients, and measured by rating scale to assess the stress.
2. **Coping** : In this study, coping refers to the specific and conscious strategies demonstrated by nurses during COVID-19 pandemic to control/ minimize stress which includes problem focused and emotional focused coping strategies, and measured by rating scale to assess the coping.
3. **Information booklet** : An information booklet consists of meaning and definitions of stress, factors affecting stress level and manifestation and impact of stress, level of coping and different coping strategies which is prepared for nurses.

## Hypotheses

H<sub>1</sub> - There is significant association or correlation between stress and coping experienced by nurses during Covid-19 pandemic.

H<sub>2</sub> – There is significant association between stress and selected baseline variables of the nurses.

H<sub>3</sub> – There is significant association between coping and selected baseline variables of the nurses.

## Conceptual framework

Conceptual framework is defined as a set of abstract and general concepts that are assembled to address a phenomenon of central interest.<sup>29</sup>

In this study, the conceptual framework is based on Sr, Callista Roy's Adaptation model (1970).

The Roy's adaptation model, developed by Callista Roy in 1970, is a conceptual framework that provides a method of thinking about how humans adapt to stressful or potentially stressful events (Roy, 2011). When an individual experiences a change in their environment, they may experience stress. Stress is the body's response to a change that requires adjustment or adaptation. An individual responds with coping mechanisms to deal with the stress and adapt to the change.<sup>31</sup>

Adaptation refers to how an individual can utilize conscious awareness, choice, and self-reflection to respond positively to environmental changes. The environment creates positive or negative stimuli producing an adaptive response to a particular circumstance. The environment consists of three types of stimuli: focal, contextual, and residual.

**Focal stimuli:** Focal stimuli confront an individual directly and typically require the most significant amount of energy. In this study the focal stimuli include staff shortage, Increase hospitalization from Covid 19, limited supply of PPE, long working hours.<sup>31</sup>

**Contextual stimuli:** Contextual stimuli are all the impulses in the environment that contribute to the focal stimuli. In this study, the contextual stimuli are Lack of experience and knowledge in caring for patients affected with Covid 19.



**Residual stimuli:** Residual stimuli include all the factors in the situation whose effects are unclear. In this study residual stimuli includes fear of contracting Covid 19, taking infection to home and spreading infection to loved ones.

There are four modes by which adaptation occurs:-

**Physiological-physical mode:** The physiological-physical mode involves the physical responses of an individual to environmental stimuli. This mode consists of nine physiologic requirements: oxygenation, nutrition, elimination, activity and rest, senses, protection, fluid-electrolyte and acid-base balance, endocrine function, and neurologic function. In this study the physiological mode includes disturbed sleep pattern, decrease appetite, urinary infection, skin rashes, weight loss, weakness and fatigue<sup>32</sup>

**Self-concept mode:** The self-concept mode is associated with feelings and beliefs about oneself, considering personal identity. Personal identity assembles through spirituality, thoughts, and moral ethics<sup>31</sup>. In this study the self - concept mode includes mood depression, anxiety, anger, social isolation, loss of control and excessive crying.

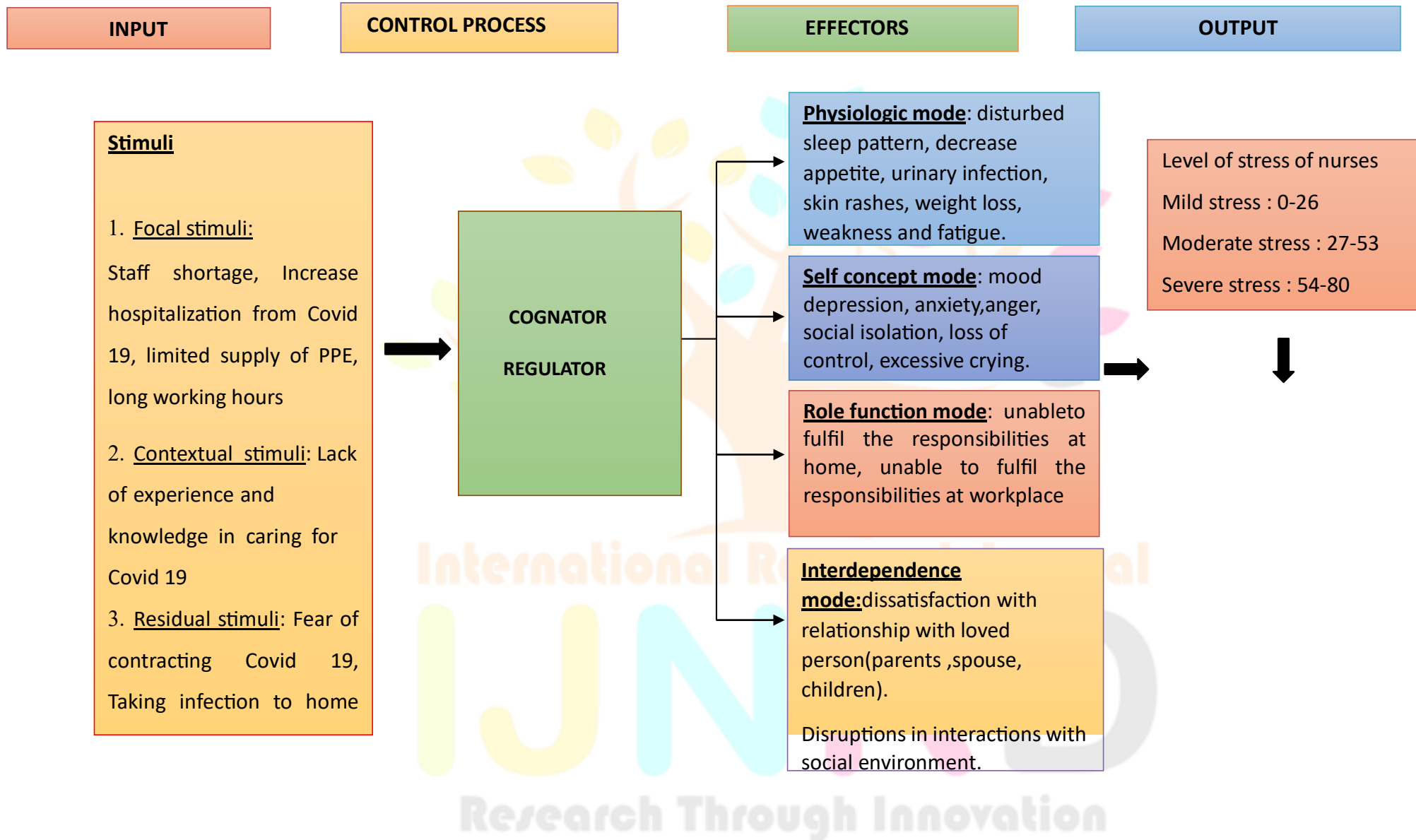
**Role function mode:** The role function mode has to do with one's role in society. These roles divide into three separate categories: primary roles- the roles of gender, secondary roles- various roles (sister, aunt, mother, grandmother, etc.), and tertiary roles- (founder of an organization, etc).<sup>31</sup> In the present study the role function mode includes unable to fulfil the responsibilities at home and unable to fulfil the responsibilities at workplace.

**Interdependence mode:** This mode considers an individual's relationships, considering support systems, trust in relationships, and effective coping mechanisms during separation and loneliness.<sup>31</sup> In this study the interdependence mode includes dissatisfaction with relationship with loved person (parents, spouse, children), and disruptions in interactions with social environment.

In addition to Roy's four adaptation modes, she correspondingly proposes two subsystems.

The first of the two is the **cognater subsystem**, which entails excitement, learning, problem-solving, memory, attention, and defense status.<sup>31</sup>

The second is the **regulator subsystem**, comprised of endocrine and neurochemical responses. The internal and external stimuli consist of psychological, physical, and social factors.<sup>31</sup>



## REVIEW OF LITERATURE

Review of literature is one of the most important steps in the research process. Review of literature is defined as a broad comprehensive, in depth systematic and critical review of scholarly applications, unpublished scholarly print materials, audio visual materials and personal communications.<sup>31</sup>

The literature of the study is organized and presented under the following headings.

**Section 1** : Stress experienced by nurses during COVID 19 pandemic.

**Section 2** : Coping experienced by nurses during COVID 19 Pandemic.

**Section 1 : Stress experienced by nurses during COVID 19 pandemic.**

A cross sectional study was conducted among the nurses from all districts of Kerala during January to June 2021. The aim of the study was to assess the obstacles and consequences faced by the nurses during Covid 19 Pandemic. Total 1630 nurses were chosen using a randomized sampling technique. Most of the participants were 32 years. More than half of them, 91% were women, 88% were married and 60% lives in staff quarters and 40% were from homes, when considering the educational status 74% were undergone BSc Nursing and 62% were having working experience. The study reveals that 50.7% of nurses faced difficulty in reaching the workplace, 74.3% feared about contracting the disease, 97.7% experienced physical exhaustion. Almost everyone agreed the fact that the pandemic had changed their working atmosphere totally and the study concludes that administration should also promote a healthy workplace and have a positive attitude and harmonious connection with the frontline personnel<sup>8</sup>

A cross sectional study was conducted in April 2020, among the health workers from Mumbai, India. who were directly involves in the triage, screening, diagnosing and treatment of Covid patients and suspected. The study aimed to assess the prevalence and predictors of stress, depressive and anxiety symptoms among health workers. The tool used were Cohen's perceived stress scale, public health questionnaire and generalized anxiety disorder. Among the participants 50.9% belong to age group 18- 24yrs, 53.04% were males. Majority, 54% were staying in home. Most of them 47.3% were working in emergency department and 88.6% had experience for 10years and below.<sup>12</sup>

A cross sectional study was conducted among the clinical and nonclinical health workers in India during June 2020 to July 2020. Total 313 clinical and nonclinical health workers, who were directly or indirectly involved in patient care were participated in the study. The psychological impact were assessed in terms of four variables, insomnia, anxiety, depression, and stress. Tools used were Insomnia severity index, patient health questions and perceived stress scale. Among the participants 64.5% were males and 35.5% were females. The majority of the participants were 31- 40 years, 66.5% were married and 76% were staying with family. The study reveals 7.3% were found to have Insomnia, 3.8% have severe clinical Insomnia and 6.7% have depression, 6.4% of had perceived stress respectively. The study concludes that measures to promote mental wellbeing innurses should be immediately implemented.<sup>9</sup>

A qualitative descriptive study was conducted among 26 nurses working in Covid 19 clinics in Eastern Turkey between May and July 2020. The aim of the study was to examine the experience and feelings of nurses who have children when caring for patients with Covid 19. The study reveals that nurses who had worried about their children. They were afraid of getting infected with the disease and transmitting it.<sup>2</sup>

A descriptive study was done among 110 nurses in a hospital, Wuhan during the period of March 2020. The aim of the study was to explore the current situation and influencing factors of job stress among nurses fighting Covid 19. A questionnaire was used and most of the study participants were females, 77% of age less than 30 years, most of them, 81% are married, level of academic qualification, professional qualification all are impacted nurses to job stress. The study concludes that nursing leaders and hospital managers should pay attention to the impact of job stress on frontline nurses, while taking positive and effective measures aimed at eliminating the source of nursing work pressure to stabilize their nursing teams and promote their work in the fight against epidemic.<sup>13</sup>

An exploratory hospital – based study was done in Kashmir among health workers of Kashmir on May 2020. The aim of the study was to assess the stress and psychological impact of the Covid 19 pandemic. A semi structured questionnaire is used to assess the stress. The study reveals that out of the 133 respondents, 81(61.4%) were single. 74 (55.6%) were males. 70 (52.6%) were between 20 -29 years of age and 91 (68%) were from urban background



and 36 were working in emergency department. The study concludes that psychological impact were more in females and those who were married in related to the place of posting. The study concludes frequent provision of information about the pandemic and psychiatric services may help to reduce the stress.<sup>22</sup>

A cross sectional study was conducted among the health workers in China from February to March 2020. It aimed to investigate the prevalence of psychological problems in health care workers. The prevalence of symptoms of anxiety, depression, insomnia and the overall psychological problems in health care workers during the Covid 19 pandemic. Psychological problems were assessed using the generalized anxiety disorder scale, Patient health questionnaire and Insomnia severity Index. Among the total health workers, the symptoms include anxiety 46.04%, depression 44.37%, insomnia 28.75%, other psychological problems are 56.5%. The study concludes that the psychological health of the health workers should be protected with timely intervention and proper information booklet<sup>18</sup>.

A cross sectional study was conducted in Michigan on May 2020. During the study among 18,3000 nurses, 695 were responded. The aim of the study was to explore perceptions of the salient sources of stress in the early stages of the pandemic, 85 items questions was developed by the research team. The study revealed that majority of the samples were females, 94.3%, 21.8% were between 35-44 years, majority of nurses 52.7% work in inpatient setting and study conclude that health care unit should provide an opportunity to express the stress they are experiencing, support one another.<sup>34</sup>

A cross sectional survey was conducted among 4,738 nurses in Changning Medical university during February 2020. The aim of the study was to assess the immediate psychological impact on frontline nurses during Covid 19 pandemic. Self-administered questionnaire were used. Majority of participants includes nurses 56.6% of age group between 19 to 30 years, women 96.9%, married 64.2%, had undergone BSc Nursing 65.9%. majority of them have moderate level of stress, about 6.6% have severe stress and study reveals that 9.4% of nurses have depression. 8.1% have anxiety symptoms and 42.7% had somatic symptoms. The study concludes that the overall mental health of frontline nurse were generally poor during Covid 19 outbreak.<sup>24</sup>

An observational cross sectional descriptive study was conducted in the second- level hospital Mexico between September and October 2020. About 116 nurses were participated, The aim of the study was to examine the prevalence of depression, anxiety and stress and to analyze the factors associated with their presence during the Covid 19 pandemic. The study reveals that 56.3% presented depression, 78.45% reported anxiety and 84.4% were stress. The factors that is found associated with stress subscale was Covid 19 working area, death of patients and also the study reported that being female is a risk factor for developing stress and depression, Among the participants about 77.59% were females. The study concludes that it is important to focus on prevention measures and strategies to reduce psychological impact, as this could affect the quality of care provided.<sup>25</sup>

A cross sectional survey was conducted among nurses who worked in 30 hospitals from China during the period August 2020. About 138279 nurses were participated and the study aim to measure the magnitude of psychological symptoms and identifying associated factors related to Covid 19. The tool used is Maslach Burnout inventory, human service survey, self-rating depression scale and self-rating anxiety scale (SAS). The study reveals that about 34% of nurses had burnout, 55.5% have depression and 41.8% had anxiety. The study concludes that government and health policy maker need to draw attention.<sup>28</sup>

A cross sectional study was conducted among 763 nurses from 16 major hospitals in the Eastern and Northern region of Saudi Arabia during Covid 19 pandemic between August to November 2022. Aim of the study was to assess the impact of mental – wellbeing, level of stress and coping strategies. The tools used were Warwick mental wellbeing scale, Nursing stress scale and Coping strategy Index – short form were used. The study reveals that the staff nurse possessed moderate stress ( $3.06 \pm 1.21$ ), adequate coping skills ( $3.33 \pm 1.23$ ). The study conclude that coping strategies must be reinforced at all times by the nurse managers.<sup>27</sup>

## **Section II : Coping experienced by nurses during COVID 19 Pandemic.**

The cross-sectional study was conducted in health centre in Poland among 220 nurses between December 2020 to February 2021. The aim of the research is to assess nurses level of stress during the COVID-19 pandemic and their sense of self-efficacy, and to learn what coping strategies they used. The tools used are the General Self-Efficacy

Scale (GSES 10–40), the Mini-COPE questionnaire and the Perceived Stress Scale PSS-10. The study reveals that majority of the participants were 43.3 years. The vast majority were women 96.4 %, respondents had bachelor's and master's degrees

>40%. work experience of the nurses was over 20 years and 80.5% worked directly with patients. Nurse managers accounted for less than 20% of the group. More than one-third 37.7% were nurses working at primary or specialist outpatient health care facilities. 11.8% respondents were working at COVID-19 units. Data obtained in the analysis shows that the nurses had a high level of stress. the most popular strategies of coping with stress were active coping and planning, as well as emotional support<sup>32</sup>.

A descriptive cross-sectional design was conducted in Madinah, Saudi Arabia among 313 nurses. The instruments were adapted and modified from Khalid "MERS-CoV Staff Questionnaire" for the feelings and factors that cause stress and "Brief COPE" for coping strategies. The majority of the participants were females 86.30%, aged 25– 34 years 56.20%, married 54.40%, and permanent residents of Saudi Arabia 46.30%. 87.50% staff nurses had a bachelor's degree, 76% with 1–5 years' experience in clinical setting, 34.20% were assigned to the Covid isolation unit and 29.10% in ED. Nurses with undergraduate qualifications accounted for 20.4%, while BSN and postgraduates were 76% and 3.5%, respectively. In terms of professional experience, 20% were recently employed, 34.2% had been practicing for up to five years, 23.3% had an experience of 6–10 years; and 22.4% were expert nurses with 11 or more years of nursing practice. Comfort with religion, spiritual beliefs, and the presence of a support system were the coping strategies used by nurses to manage the stress and negative feelings during the Covid-19 outbreak.<sup>3</sup>

### Summary

The above studies revealed that nurse had experienced stress and associated symptoms during the Covid 19 pandemic and coping technique is found to be essential for the management of stress among nurse

## METHODOLOGY

Research methodology is a systematic way of doing research to solve a problem. Research methodology used in the investigation of nature and matter and deals specifically with the manner in which data is collected, analyzed and interpreted.<sup>29</sup>

The present study aimed to assess the stress and coping of the nurses during Covid 19 pandemic, find out the association between the stress and coping with the selected baseline variables and to find correlation between stress and coping experienced by the nurses during Covid 19 pandemic.

This chapter deals with methodology dramatized for the present study. It includes research approach, research design, variables, schematic representation of the study, setting of the study, population, sample and sampling technique, inclusion criteria, exclusion criteria, development of the tool, description of the tool, content validity, reliability of the tool, pilot study, data collection process and plan for data analysis.

### Research approach

Research approach is the blueprint that the investigator adopts to carry out the research study. The research approach consists of quantitative method, qualitative method and combination of two methods.<sup>29</sup>

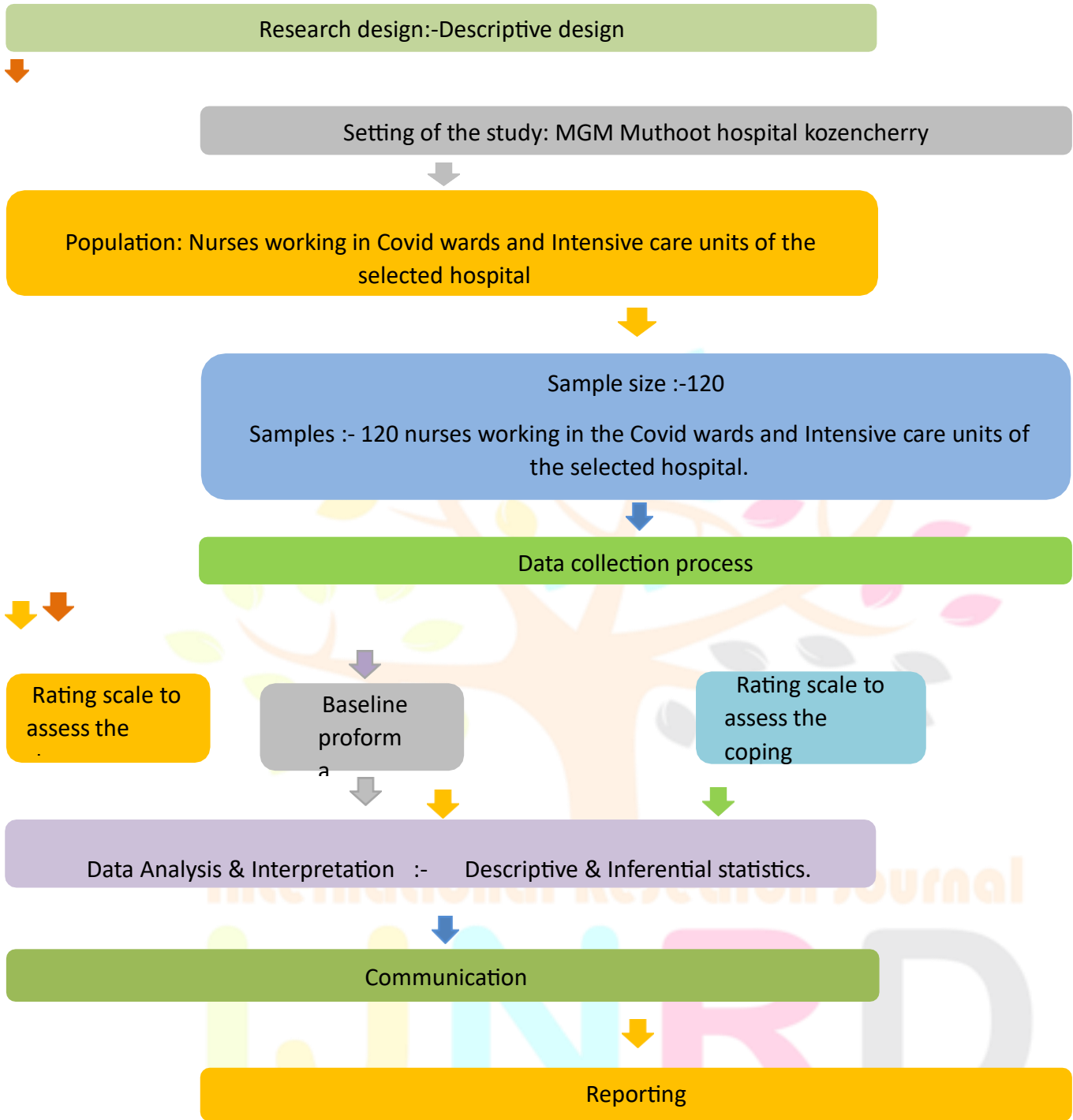
Quantitative research approach was used in present study.

### Research Design

The research design is the master plan specifying the methods and procedures for collecting and analyzing the needed information in a research study.<sup>29</sup>

Descriptive study design was selected for the present day





**Figure 1: schematic representation of the research study.**

## Setting of the study

Setting is the location for conducting research; it can be natural, partially controlled or highly controlled.<sup>29</sup>

The present study was conducted in MGM Muthoot hospital Kozhencherry in Pathanamthitta district. This is the first NABH Accredited hospital in Central Travancore and one of the handfuls of NABH Nursing Excellence certified hospitals in the region. Since its inception in 1988, MGM Muthoot Hospital, Kozhencherry is committed to providing high quality specialized healthcare services to the community. With over 15 specialties and 9 super specialty medical services and a team of renowned specialists with decades of experience. The criteria for selection of the study setting were focused on the feasibility and familiarity of the researcher in carrying out the study.

## Population

The entire set of individuals or subjects having some common characteristics for the research study is population.<sup>29</sup>

In this study, population encompasses nurses working in medical ward, medical ICU, coronary care unit, neuro medical ICU and emergency care units of the selected hospital, Pathanamthitta district.

## Sample and sampling technique

Sample refers to a selected proportion of the defined population.<sup>29</sup> In this study, the sample consisted of 120 staff nurses. Sampling technique is a process of selecting representative units from an entire population of the study.

<sup>29</sup>Convenience sampling technique was used for the selection of samples in this study.

## Sample Size Estimation

The sample size was estimated by using the formula,  $n = (Z \text{ value})^2 \times (SD)^2$

$(d)^2$  \_\_\_\_\_

Where n = sample size

Z= Normal deviation for two tailed alternative hypotheses at 5 % level of significance SD = Standard deviation

obtained from pilot study

d = Expected allowable error in the mean

### **Inclusion criteria:**

- Registered nurses of both genders
- Registered nurses who were working in the medical wards, Medical ICU, Neuro medical ICU, Coronary care unit and Emergency care unit of the selected hospital.

### **Exclusion criteria:**

- Registered nurses having less than 3months of working experience.
- Registered nurses not willing to participate in the study.

### **Tool /Instruments**

The data were collected by using the following tools.

- Tool 1: Baseline proforma.
- Tool 2: Rating scale to assess the stress experienced by the nurses during Covid 19 pandemic.
- Tool 3: Rating scale to assess the coping experienced by the nurses during Covid 19 pandemic.

### **Development /Selection of the Tool**

An instrument is a device used to collect data.<sup>29</sup> The researcher prepared/selected the tool according to the objectives of the study.

After an extensive review of literature and discussion with the guide and subject experts, rating scales for assessing the stress and coping were developed by the researcher for the present study.

Baseline assessment proforma was developed by the researcher with the help of reviewed literature and in consultation with the guide and subject experts. Personal experience of the researcher was also counted in preparing and selecting the tools.

An information booklet on stress and coping was prepared by the researcher for the nurses which contains

information regarding meaning and definition of stress, levels of coping and different coping strategies.

## **Description of the tool**

### **Tool 1: Baseline Proforma**

It consisted of 12 items related to baseline variables of the samples. It includes age, gender, marital status, number of children, type of family, family income, educational status, designation, accommodation status, area of residence, area of work and work experience.

### **Tool 2: Rating scale to assess the stress experienced by nurses during Covid19 pandemic.**

The tool consisted of 21 items to assess the stress experienced by nurses during the Covid 19 pandemic. The tool comprises questions which is related to difficulty with PPE, poor cooperation by the patients, concerns regarding the family life, social isolation, workload and uncertainty about future.

### **Tool 3: Rating scale to assess the coping experienced by nurses during Covid19 pandemic.**

The tool consisted of 15 items to assess the coping experienced by nurses during Covid pandemic The tool comprises questions which is related to problem based and emotion based coping strategies which the nurses used during the pandemic.

## **Content validity**

Content validity refers to the degree to which an instrument has an appropriate sample of items for the construct being measured.<sup>29</sup> In order to infer the content validity of the tools, the prepared tool along with the problem statement, objectives, hypotheses and operational definitions were submitted to 5 experts. The experts were from the field of Medical surgical Nursing, Master In social work and Statistician.

The selection of experts was done based on their experience and clinical expertise. The experts were requested to judge the items for further modifications. A criterion rating scale for validation of the tool was developed with options like relevant, need modification, not relevant and remarks from the experts.

The tool was modified and finalized based on the suggestions received from the experts. Tool was found to be valid.

## **Reliability of the tool**



Reliability is the degree of consistency and accuracy with which an instrument measures the attribute for which it is designed to measure.<sup>29</sup>

The reliability of the tool was calculated by split half method using the formula

$r^1 = 2r/1+r$ . The 'r' value was calculated as 0.713 and the tool was found to be reliable.

### **Pilot study**

A pilot study is referred to a small-scale preliminary study conducted in order to evaluate feasibility, time, cost, adverse events, and effect size (statistical variability) in an attempt to predict an appropriate sample size and improve upon the study design prior to performance of a full-scale research project.<sup>29</sup>

Pilot study was conducted in Muthoot Hospital, Pathanamthitta in the month of January. Prior to the study, formal permission was obtained from the concerned authority. Twelve nurses who met the inclusion criteria were selected through convenience sampling technique. Baseline assessment proforma and rating scales to assess the stress and coping of nurses were administered after obtaining an individual written informed consent from all the nurses. It took 10-15 minutes to complete the tools.

The collected data were analyzed using descriptive and inferential statistics. Frequency and percentage distribution were used to describe the baseline proforma, and stress and coping levels. Spearman correlation was used to assess the correlation of stress and coping and Chi-square test was used to find out the association between stress and coping with selected baseline variables of nurses.

After conducting the pilot study, it was found that the tool was relevant, the time and cost for the study were within the limits. So, the investigator planned to carry out the data collection for the main study on the same way as the pilot study was conducted.

### **Data collection process**

Data collection is the process of gathering information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses and evaluate outcomes.<sup>29</sup>

For conducting main study, formal written permission was obtained from concerned authority from Muthoot

hospital, Kozhencherry prior to data collection.

The researcher introduced herself with subjects and explained the purpose of study to them, confidentiality was assured to all subjects.

Data collection was done in MGM Muthoot hospital, Kozhencherry, during the period 17.01.2022 to 05.02.2022, data were collected from the Medical wards, Medical ICU, Neuro medical ICU, coronary care unit and Emergency care unit of the selected hospital. 120 nurses from 3shift were selected as per the inclusion and exclusion criteria using convenience sampling technique. The purpose of the study was explained to the samples and an individual written informed consent was taken from all the nurses after explaining the need of the study. The confidentiality of the information was maintained. Data was collected using baseline assessment proforma and rating scales to assess the stress and coping.

Frequency and percentage distribution were used to analyze the baseline proforma, level of stress and coping, Spearman correlation was used to assess the correlation of stress and coping and Chi-square test was used to find out the association between stress and coping with the selected baseline variables of nurses.

### **Plan for data analysis**

Data analysis is planned based on the objective of the study.<sup>29</sup>

Analysis is a process of organizing and consolidating data in such a way that research questions can be answered.<sup>29</sup>

After the collection of the data, the data were organized, tabulated and summarized by preparing the master data sheet and by using descriptive and inferential statistics using SPSS (statistical package for social science), version 16.

### **SUMMARY**

This chapter had dealt with the research approach, research design, variables, schematic representation of the study, setting of the study, population, sample and sampling technique, inclusion criteria and exclusion criteria, tool/instruments, development/selection of the tool, description of the tool, content validity, reliability of the tool, pilot study, data collection process and plan for data analysis

### **ANALYSIS AND INTERPRETATION**

Analysis has been defined as categorizing, ordering, manipulating and summarizing the data to obtain answers to

research questions. Analysis is the process of organizing and synthesizing the data so as to answer research questions and test hypothesis. Analysis and interpretation of the data is the most important phase of the research process. The data used is to be systematically analyzed so that trends and patterns of relationship can be detected.<sup>29</sup>

In this study the data were analyzed based on the objectives of the study using descriptive and inferential statistics.

### Objectives of study

1. Assess the level of stress experienced by nurses during Covid-19 pandemic.
2. Assess the level of coping experienced by nurses during Covid-19 pandemic.
3. Find out the correlation between stress and coping experienced by nurses during Covid-19 pandemic.
4. Find out the association between stress and selected baseline variables of nurses.
5. Find out the association between coping and selected baseline variables of nurses.

### Organization of study findings

Data collected were analyzed, organized and presented under the following sections based on the objectives of the study.

**Section I** : Description of baseline proforma.

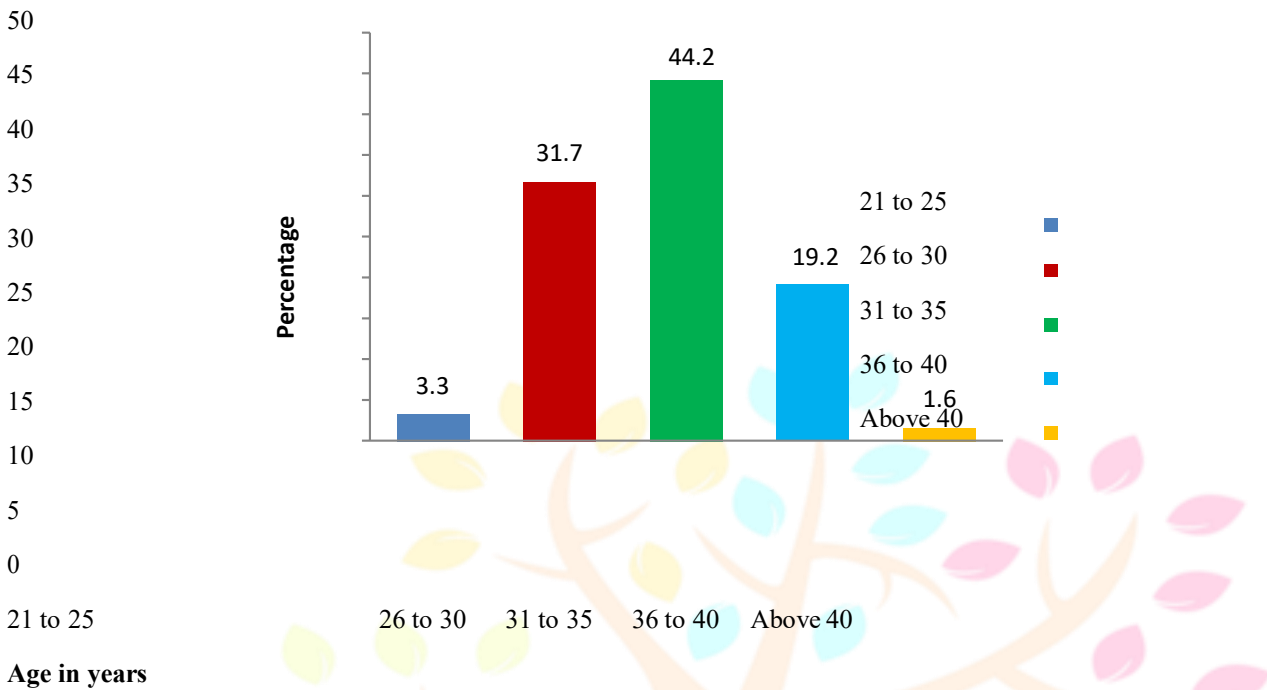
**Section II** : Description of level of stress experienced by nurses.

**Section III** : Description of level of coping experienced by nurses.

**Section IV** : Association between level of stress and selected baseline variables. **Section V** : Association between level of coping and selected baseline variables. **Section VI** : Correlation between stress and coping experienced by the nurses.

**Section I: Distribution of nurses according to baseline variables**

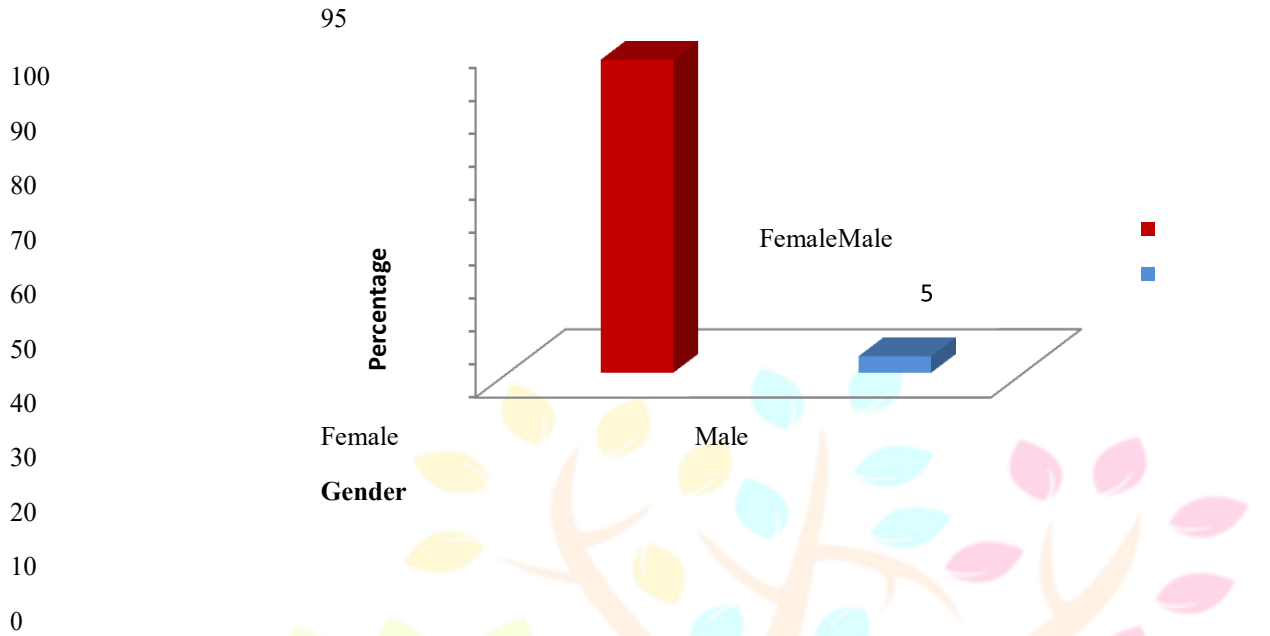
(N=120)



**Figure 3: Bar Diagram showing distribution of nurses based on age**

From this figure, it is evident that majority of the nurses 44.2% belong to the age group of 31-35years, 31.7% of the nurses belong to the age group of 26-30 years, 19.2% of the nurses belong to the age group of 36-40years, 3.3% of the nurses belongs to the age group of 21-25years and only 1.6% of the nurses belongs to the agegroup of above 40 years.

(N=120)



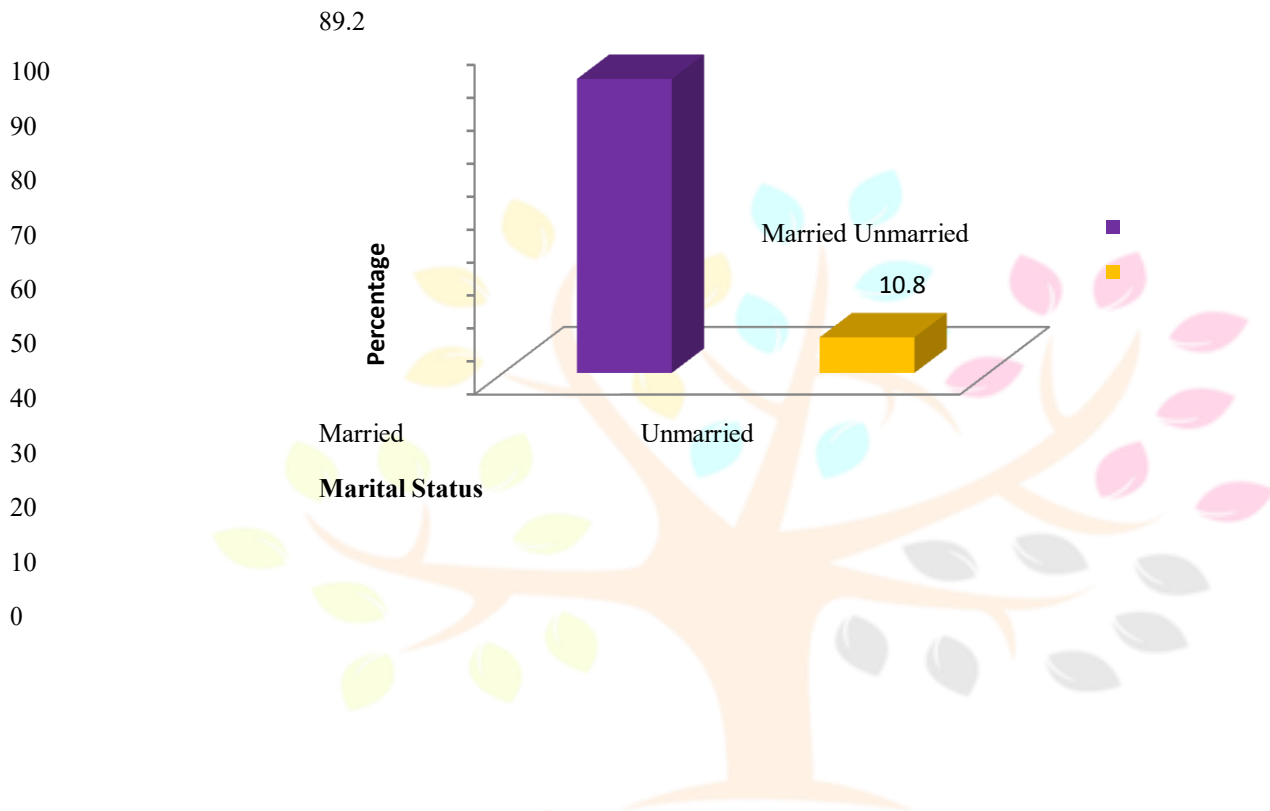
**Figure 4: Bar diagram showing distribution of nurses based on gender**

Figure 4 shows that majority of the nurses, 95% were females and 5% nurses were males.





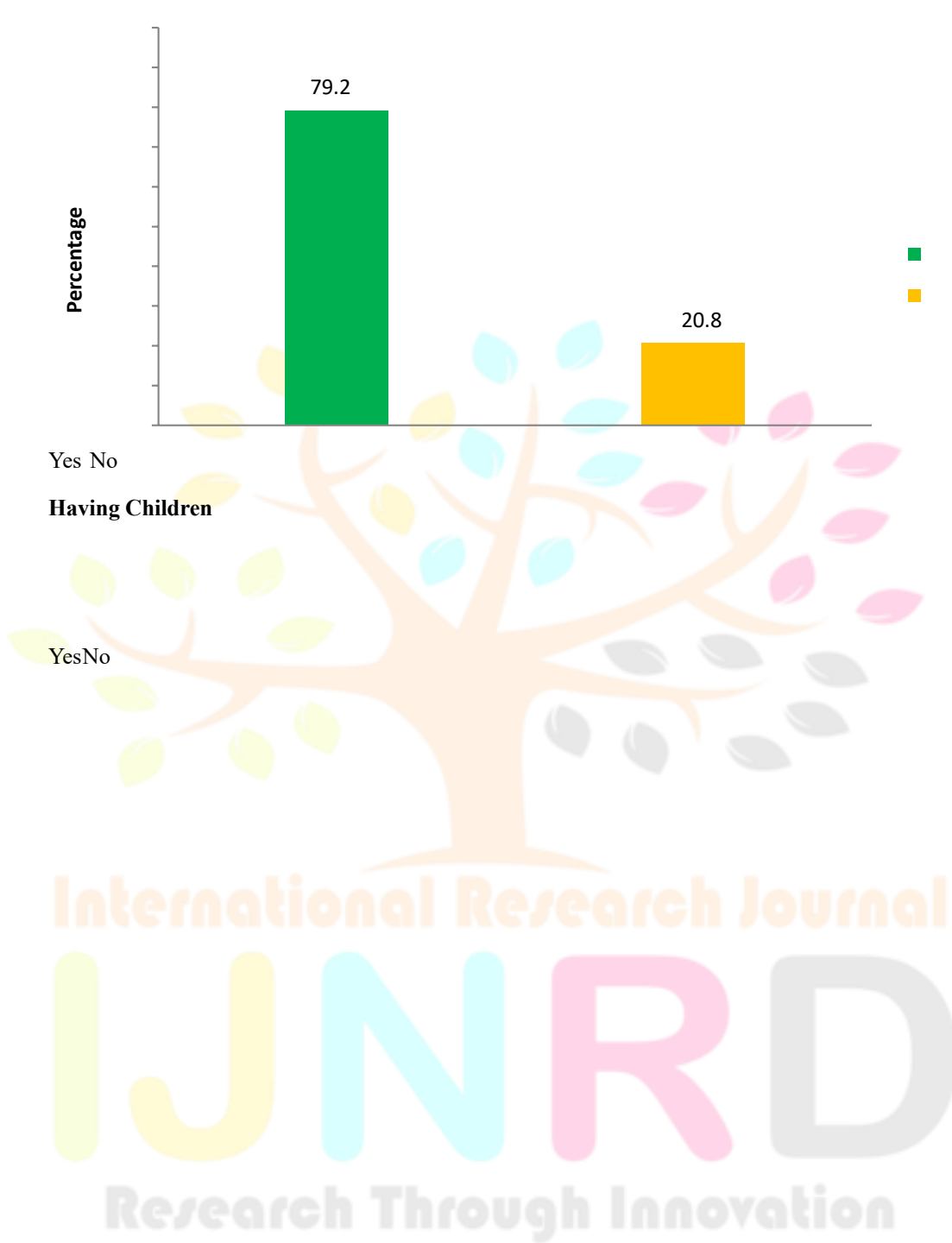
(N=120)



**Figure 5: Bar diagram showing distribution of nurses based on marital status.**

Figure 5 shows that majority of nurses 89.2% were married and 10.8% wereunmarried.

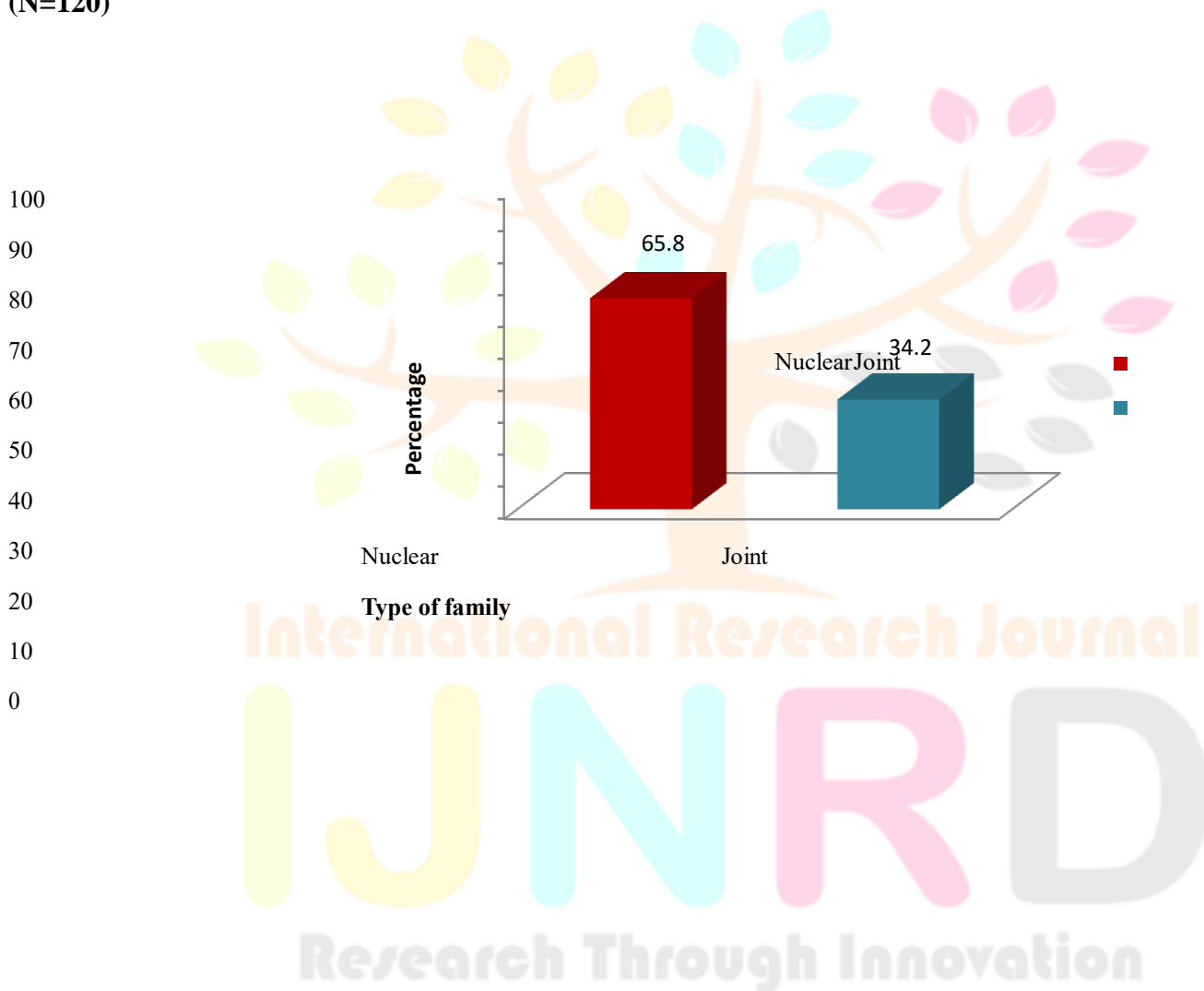
(N=120)



**Figure 6: Bar diagram showing distribution of nurses based on having children**

From this figure it is evident that 79.2% nurses were having children and 20.8 %nurses were not having children.

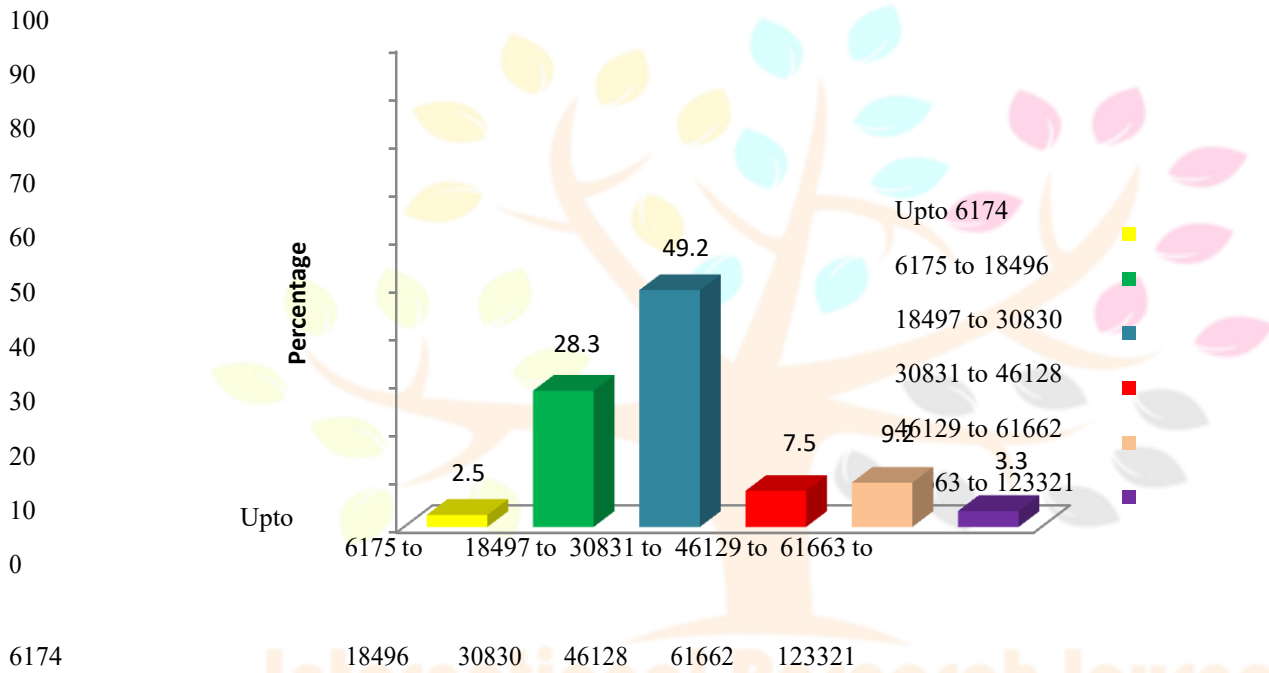
(N=120)



**Figure 7: Bar diagram showing distribution of nurses based on types of Family.**

Figure 7 shows that 65.8% of nurses belongs to nuclear family and 34.2% of nurses belongs to joint family

(N=120)

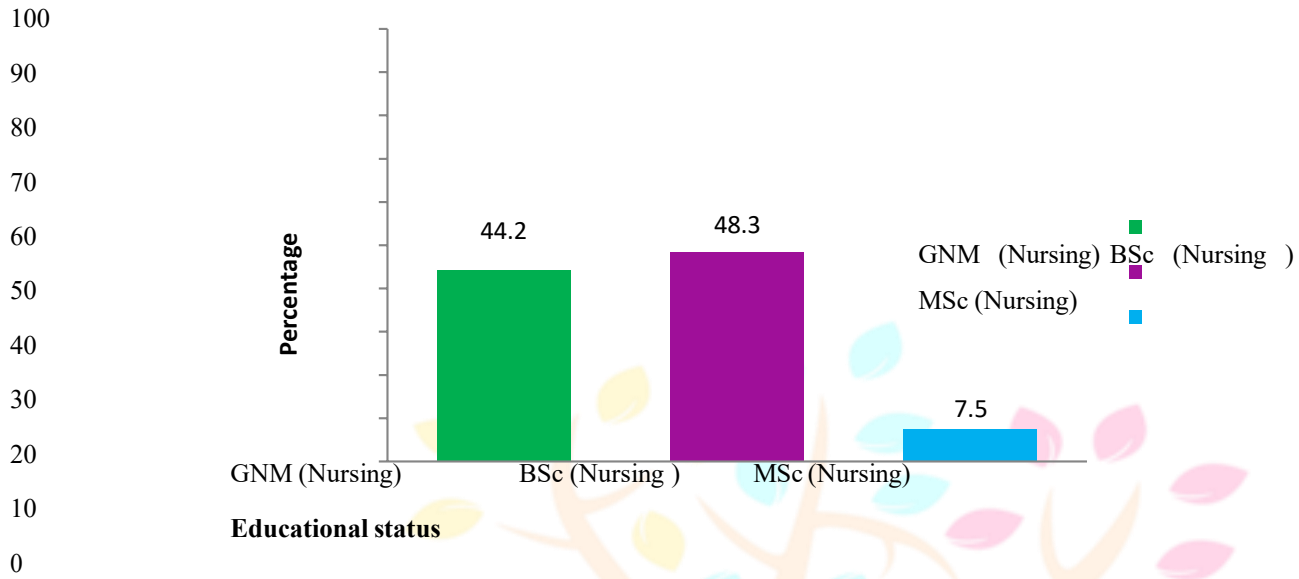


**Family income in rupees**

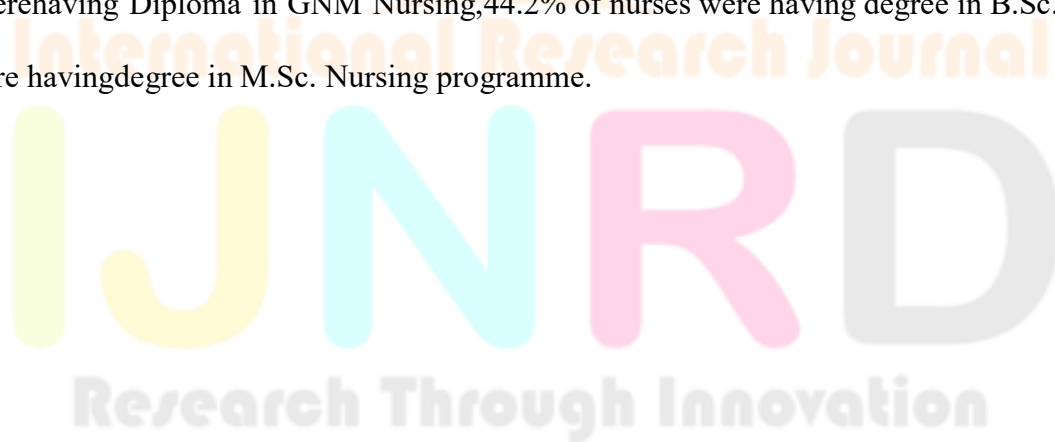
**Figure 8: Bar diagram showing distribution of nurses based on family income**

Figure 8 shows that 49.2% of nurses were having family income between Rs.18497 to 30830, 28.3% nurses were having family income between 6175 to 18496, 9.2 % of nurses were having family income between 46129 to 61662, 7.5% nurses were having family income between 30831 to 46128 ,3.3% of nurses were having family income between 61663to 123321 and only 2.5% nurses were having family income up to 6174

(N=120)

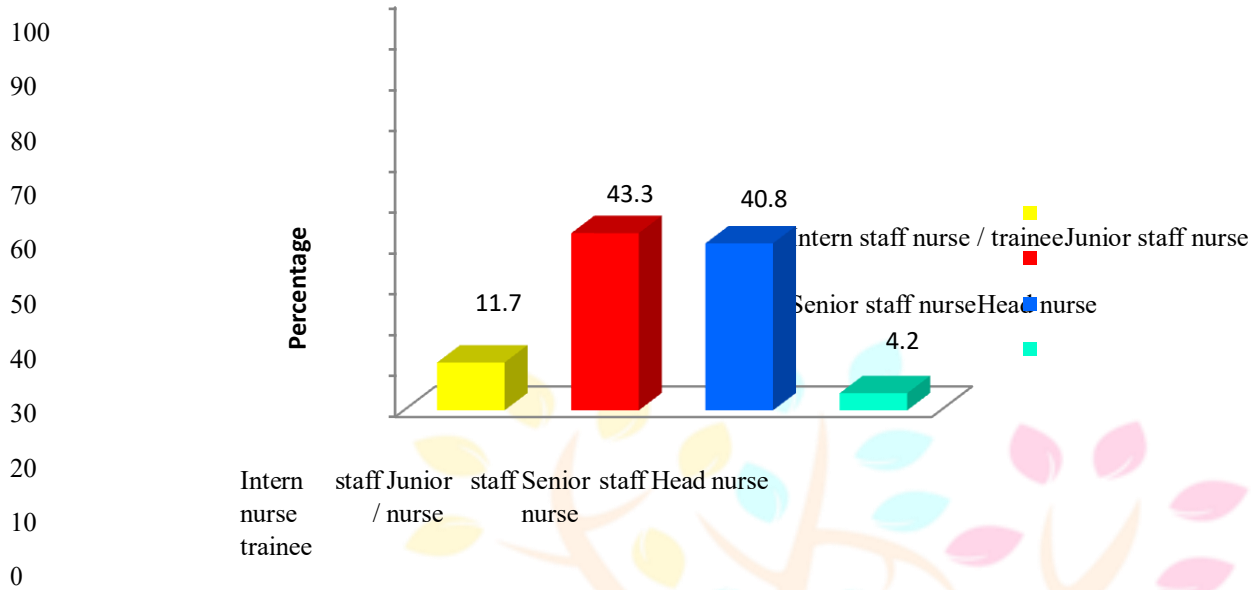


**Figure 9: Bar diagram shows distribution of nurses based on educational status.** Figure 9 shows that majority of nurses 48.3% were having Diploma in GNM Nursing, 44.2% of nurses were having degree in B.Sc. Nursing and 7.5% of nurses were having degree in M.Sc. Nursing programme.





(N=120)

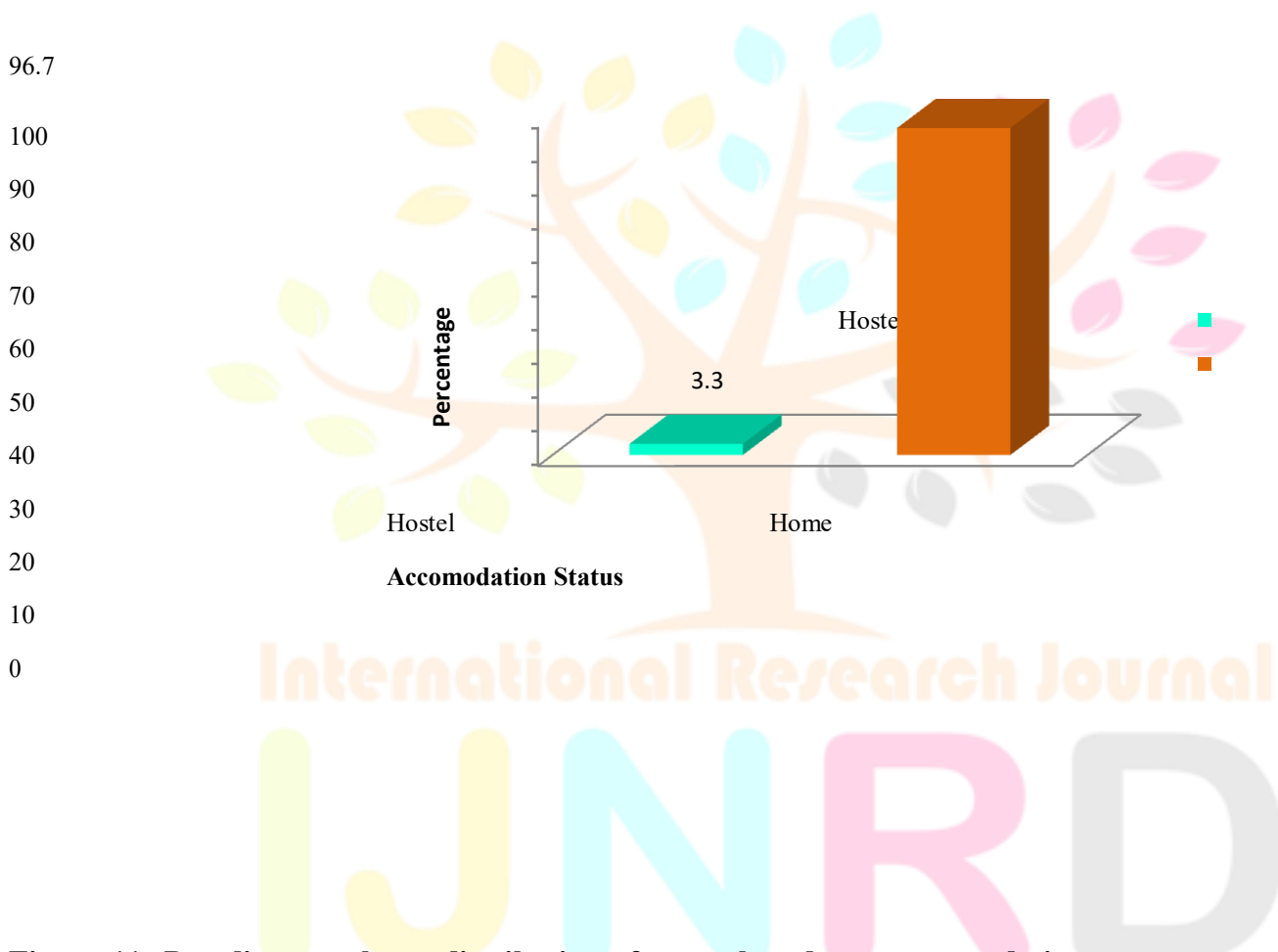


**Designation**

**Figure 10: Bar diagram shows distribution of nurses based on designation**

From this figure it is evident that 43.3% were junior staff nurses, 40.8% were senior staff nurses, 11.7% were intern staff nurses trainee and 4.2% were head nurses.

(N=120)



**Figure 11: Bar diagram shows distribution of nurse based on accommodation status.**

From this figure it is evident majority of nurses 96.7% were staying in home and only 3.3% of nurses were staying in hostel.

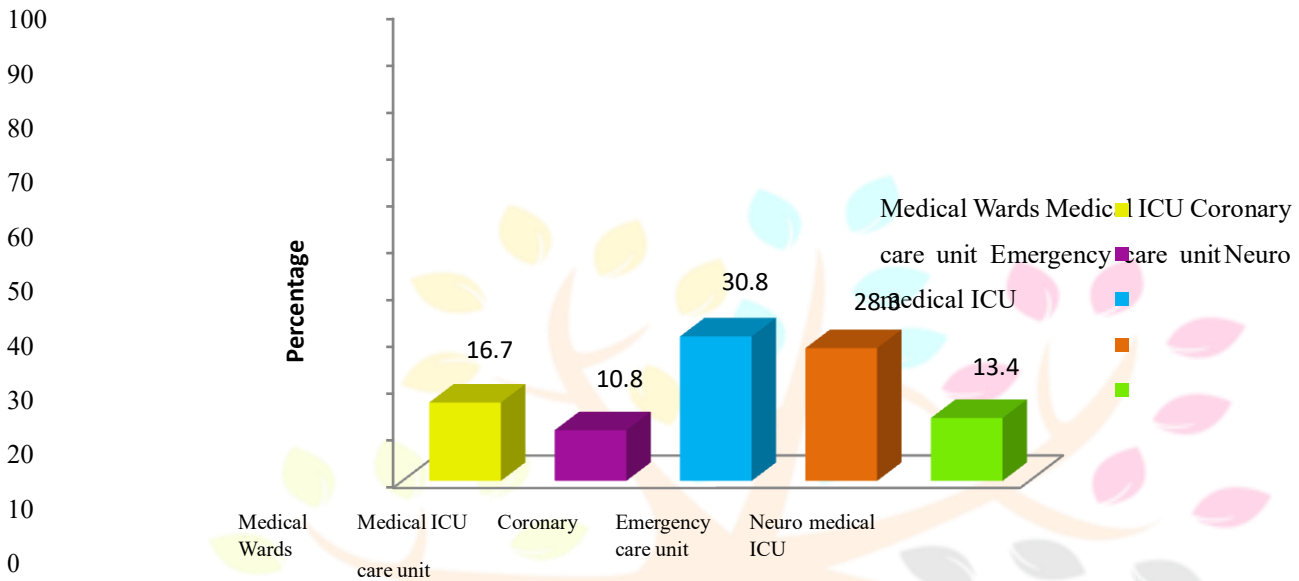
(N=120)



**Figure 12: Bar diagram showing distribution of nurses based on Area of residence.**

From this figure it is evident that 35.8% nurses were from urban area, 33.4% nurses from semi urban area and 30.8% were from rural area.

(N=120)

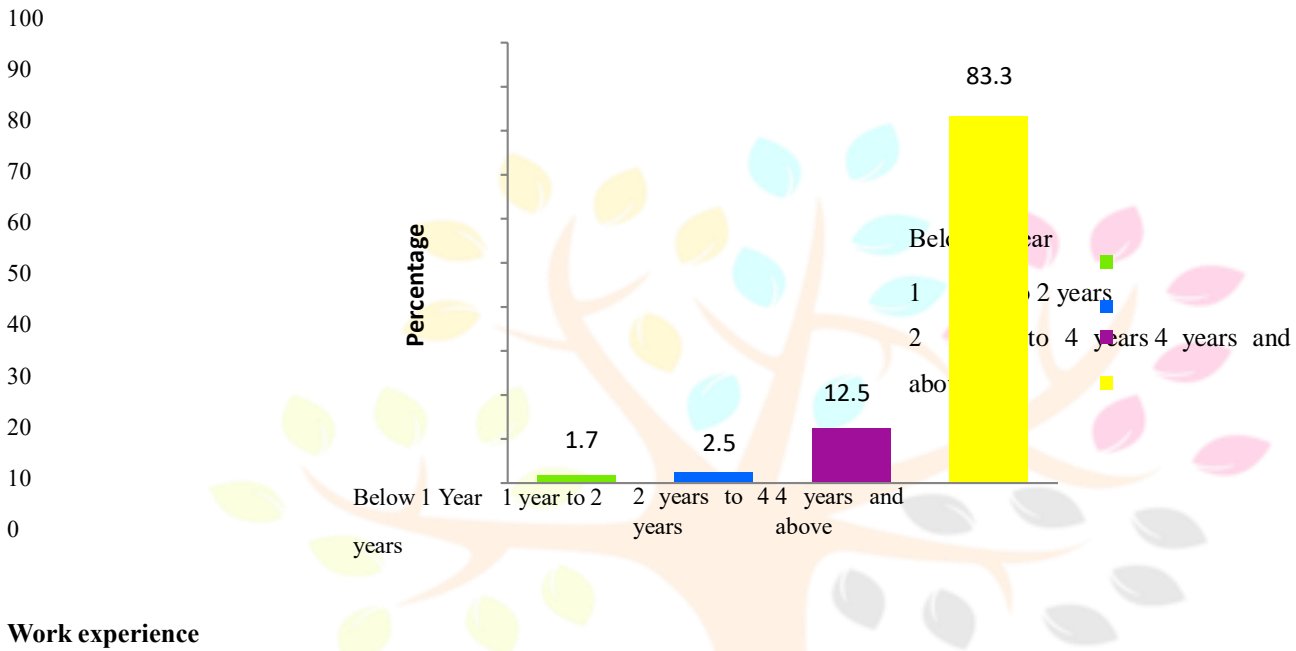


Area of Work

**Figure 13: Bar diagram shows distribution of nurse based on area of work.**

Figure 13 shows 30.8% nurses were working in coronary care unit, 28.3% nurses were working in emergency care unit, 16.7% nurses were working in medical wards, 13.4% nurses were working in neuro medical ICU and 10.8% were working in medical ICU.

(N =120)

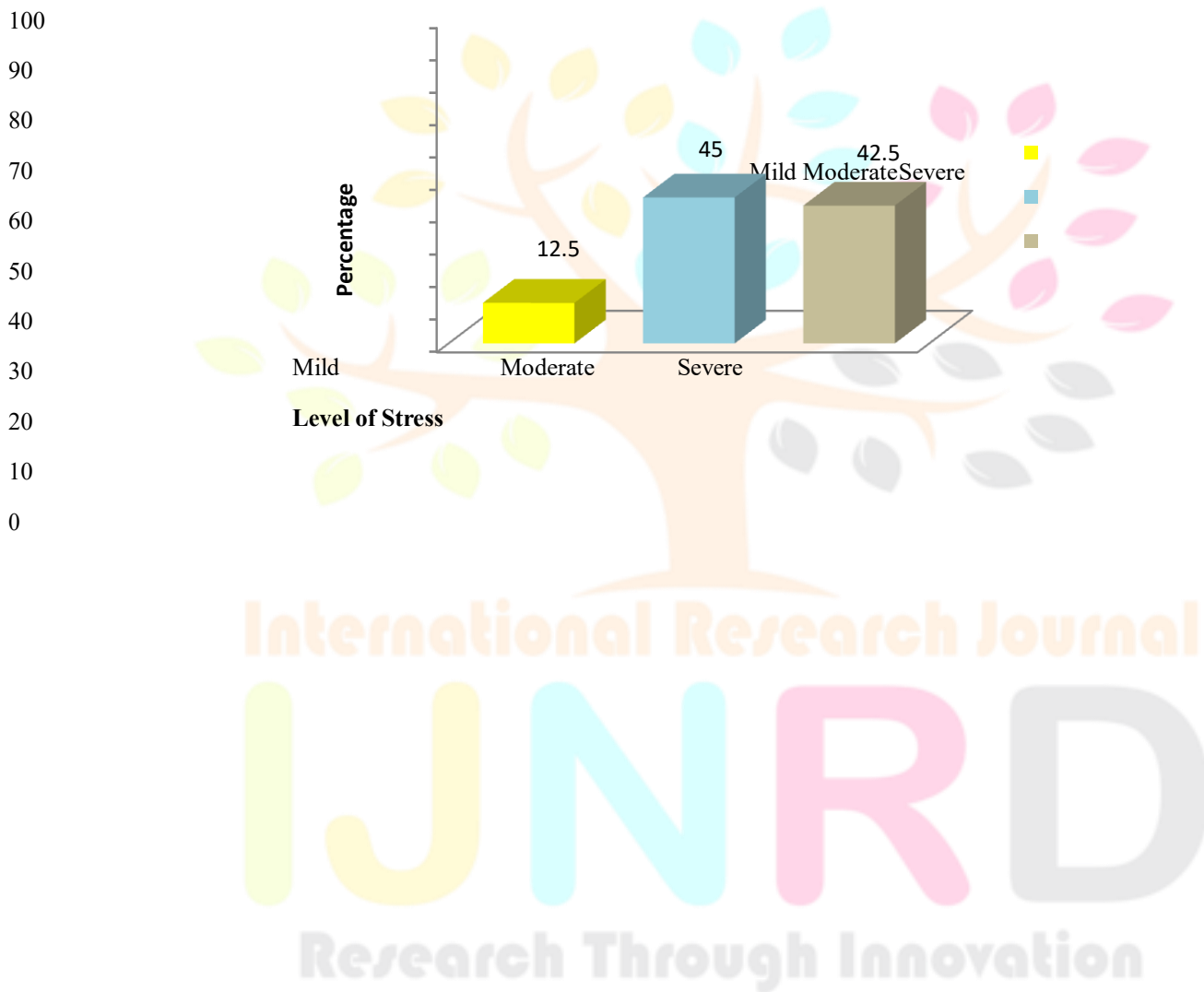


**Figure 14: Bar diagram shows distribution of nurse based on work experience**

From this figure it is evident that majority 83.3% of nurses were having working experience of 4 years and above, 12.5% of nurses were having working experience of 2 years and 4 years, 2.5% nurses were having working experience of 1 to 2 years and only 1.7% of nurses having experience of below 1 year.



**SECTION II : Description of nurses according to level of stress experienced.** This section deals with the distribution of nurses according to the level of stress experienced as Mild, Moderate and Severe.

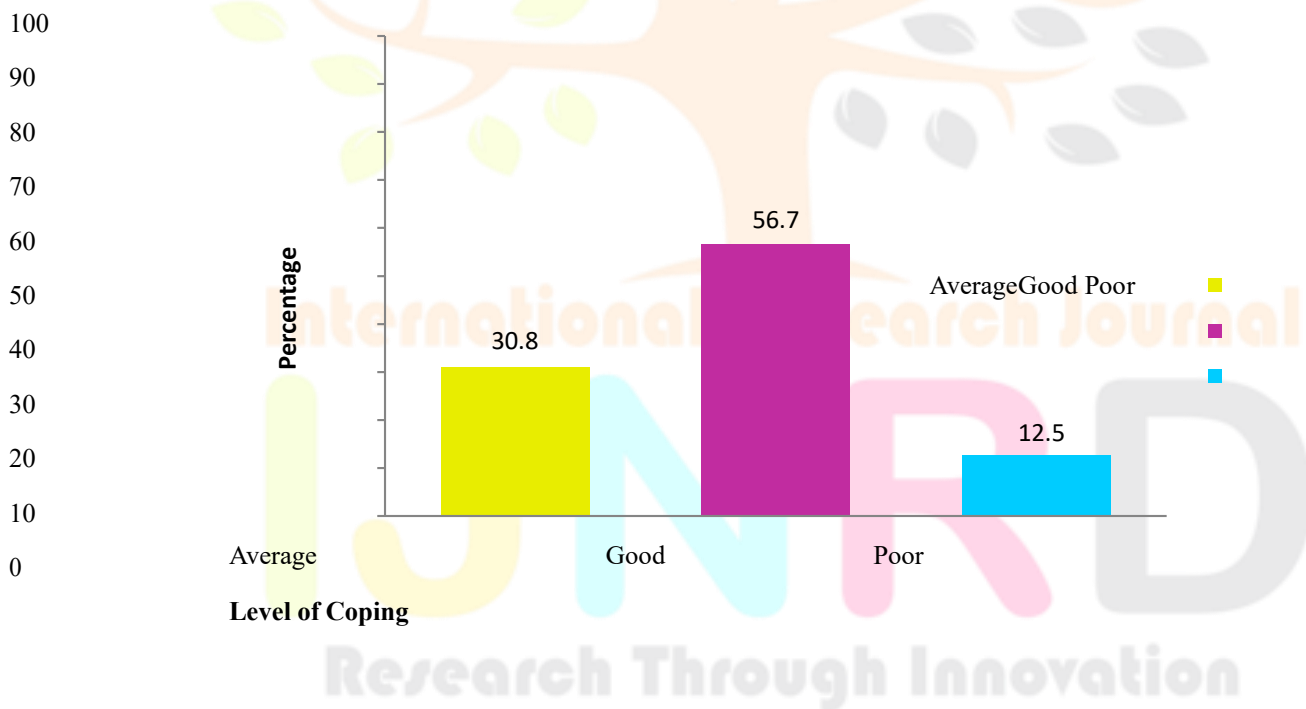


**Figure 15: Bar diagram showing distribution of nurses based on level of stress experienced.**

Figure 15 reveals that most of the nurses 45% experienced moderate stress and about 42.5% nurses experienced severe stress and 12.5 % nurses were experienced mild stress.

**SECTION III : Description of level of coping experienced by nurses.**

This section deals with the distribution of nurses according to the level of coping experienced as Good, Average and Poor.



**Figure 16 :Bar diagram showing distribution of nurses based on level of coping experienced.**

Figure 16 reveals that majority of nurses 56.7% experienced average coping, about 30.8% of nurses experienced good coping and 12.5% of nurses experienced poor coping.

### Section III: Association between baseline variables and level of stress.

In order to determine the association between the baseline variables and level of stress, chi square test was computed and the data were presented as follows.

**Table 1: Association between age and level of stress**

(N = 120)

Age in years	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	F	f	
21 – 25	0	0	2	1.6	2	1.6	
26 – 30	4	3.3	17	14.4	17	14.2	
31 – 35	9	7.5	21	17.5	23	19.2	4.96
36 – 40	2	1.6	12	10	9	7.5	
Above 40	0	0	2	1.6	0	0	

NS- Not Significant

The above table shows that the computed chi-square value of age is 4.96 which indicate that there was statistically no association found between age and level of stress.

**Table 2 : Association between gender and level of stress.**

(N = 120)

Gender	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Male	3	2.5	2	1.7	1	0.9	
Female	12	10	52	43.3	50	41.6	<b>11.95*</b>
Transgender	0	0	0	0	0	0	

**\*P value =0.18**

The above table shows that the computed chi-square value of gender is 11.95 which indicates that there was statistically significant association between gender and level of stress. \*p (<0.005)

**Table3: Association between marital status and level of stress****(N=120)**

Marital status of nurses	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Married	15	12.5	47	39.2	45	37.5	2.12
Unmarried	0	0	7	5.8	6	5	

NS -Not Significant

The above table shows that the computed chi-square value of marital status is 2.12 which indicate that there was statistically no association between marital status and level of stress.





**Table 4: Association between Having children and level of stress.**

(N=120)

Nurses having children	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Having children	15	12.5	41	34.2	39	32.5	<b>9.5*</b>
Not having children	0	0	13	10.8	12	10	

\* P value=0.45

The above table shows that there is a significant association found between having children and stress \*p<0.005.



**Table 5: Association between type of family and level of stress.**

(N=120)

Type of family	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Nuclear family	9	7.5	36	30	34	28.3	.259
Joint family	6	5	18	15	17	14.2	NS

NS =Not Significant

The above table shows that the computed chi-square value of type of family is .259 which indicate that there was statistically no association between type of family and level of stress.

**Table 6: Association between family income and level of stress.**

(N=120)

Family income of nurses	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
up to 6174	0	0	2	1.6	1	.83	
6175- 18496	1	1	15	12.5	18	15	
18497-30830	13	10.8	22	18.3	24	20	
30831- 46128	0	0	7	5.8	2	1.6	<b>16.7*</b>
46129 -61662	1	.83	7	5.8	3	2.5	
61663 -123321	0	0	1	.94	3	2.5	
Above 123322	0	0	0	0	0	0	

**\*P Value=.040**

The data presented in table 6 shows that there is significant association between family income and level of stress

\*p &lt;0.05.

**Table 7: Association between educational qualification and level of stress.**

(N=120)

Educational qualification of nurse	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
GNM (N)	6	5	29	24.1	18	15	5.44
BSc (N)	9	7.5	21	17.5	28	23.3	NS
MSc (N)	0	0	4	3.33	5	4.16	

NS=Not Significant

The data presented in table 7 shows that computed chi-square value for educational qualification 0.245, which is statistically not associated with level of stress.

**Table 8: Association between designation and level of stress.**

(N=120)

Designation of nurses	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Intern staff Nurse /trainee	0	0	9	7.5	5	4.16	
Junior staff nurse	7	5.8	19	15.8	26	21.6	<b>16.2*</b>
Senior staff nurse	5	4.1	24	20	20	16.54	
Head nurse	3	2.5	2	2	0	0	

**\*P value=.013**

The data presented in table 8 shows that there is significant association found between designation and level of stress \*p<0.05.



**Table 9: Association between accommodation and level of stress.**

(N=120)

Accommodation	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Hostel	1	9	3	2.5	0	0	3.10
Home	14	11.6	51	42.5	51	42.5	NS

NS =Not significant

The data presented in table 9 shows that computed chi-square value for accommodation status was 3.10, which was statistically not associated with the level of stress.



**Table 10: Association between Area of residence and level of stress**

(N=120)

Area of residence	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Urban	8	6.6	20	16.6	15	12.5	6.25
Semi urban	1	.8	19	15.8	20	16.6	NS
Rural	6	5	15	12.5	16	13.6	

NS =Not Significant

The above data shows that the computed chi- square value of area of residence was 6.25, which indicate that there is no significant association between area of residence and level of stress.

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**Table 11: Association between Area of work and level of stress.**

(N=120)

Area of work	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
Medical ward	3	2.5	8	6.6	9	7.5	
Medical care unit	1	.9	7	5.8	5	4.1	
Emergency unit	3	2.5	17	14	14	11.6	<b>19.1*</b>
Coronary care unit	1	1.8	17	14	19	15	
Neuro medical unit	7	5.8	5	4.6	4	3.3	

**\*P value =0.014**

The data presented in the table 11 shows that computed chi-square value for area of work was (19.1), which was statistically significant with level of stress \*p<0.05.

**Table 12: Association between work experience and level of stress.**

(N=120)

work experience	Level of stress						$\chi^2$
	Mild		Moderate		Severe		
	f	%	f	%	f	%	
below 1year	1	.8	1	.3	0	0	
1 years to2 year	0	0	0	0	3	2.5	
2 years to4 year	1	.8	7	5.8	7	5.8	7.74
4 year & above	13	11	46	39	41	34	NS

NS= Not Significant

The data given table 12 shows that computed chi – square value for work experience is 7.74, which is statistically not associated with the level of stress.

**Section V : Association between level of coping and baseline variables.**

In order to determine the association between the baseline variables and level of stress, chi square test was computed and the data were presented as follows.

**Table 13 : Association between age and coping.**

(N=120)

Age in years	level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
21 – 25	0	0	4	3.6	0	0	
26 – 30	9	7.5	18	15	11	9.17	
31 – 35	17	14.1	35	29.6	1	.83	<b>23.4*</b>
36 – 40	9	7.5	11	9.1	3	2.5	
Above 40	2	1.6	0	0	0	0	

\*P value =0.03

The data presented in the table 13 shows that the computed value of chi-square value for age was 23.43, which indicate that there is a significant association between age and coping (\* p <0.05).

**Table 14 : Association between gender and coping.**

(N=120)

Gender	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Male	0	0	6	5	0	0	
Female	37	30.2	62	52.3	15	12.5	4.8
Transgender	0	0	0	0	0	0	

NS = Not Significant

The data presented in table 14 shows that computed chi-square value for gender was 4.83 which indicates that there is no association between gender and coping.

**Table 15: Association between marital status and coping.**

(N=120)

Marital status of nurses	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Married	33	27.6	60	50	14	11.6	.331
Unmarried	4	3.3	8	6.6	1	.9	

NS = Not Significant

The data presented in table 15 shows that computed chi-square value for marital status was .331, which indicate there is no association between marital status and coping.





**Table 16: Association between having children and level of coping.**

(N=120)

Nurses having Children	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Having children	25	20.8	58	48.3	12	10	<b>8.57*</b>
Not having Children	12	10	10	8.3	3	2.6	

\*P value =.042

The data presented in table 16 shows that computed chi-square value for having children was 8.57 which indicate that there is significant association between having children and level of coping\*( $p < .005$ ).

**Table 17: Association between type of family and level of coping.**

(N=120)

Type of family	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Nuclear	26	21.6	46	38.3	7	5.9	2.87
Family							NS
Joint family	11	9.18	22	18.3	8	6.72	

NS =Not Significant

The data presented in table 17 shows that computed chi-square value for type of family was 2.87 which indicate that there is no significant association between type of family and level of coping.

**Table 18: Association between family income and level of coping**

(N=120)

Family income of nurses	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
up to 6174	2	0	1	1.6	0	.98	
6175- 18496	17	.96	12	12.5	5	15	
18497-30830	34	10.8	17	18.3	8	20	
30831- 46128	5	0	2	5.8	2	1.6	7.29
46129 -61662	6	.83	5	5.8	0	2.5	NS
61663 -123321	4	0	0	.83	0	2.5	
Above 123322	0	0	0	0	0	0	

NS = Not Significant

The data presented in table 18 shows that computed chi-square value for family income was 7.29 which indicate that there is no significant association between family income and level of coping.

**Table19: Association between educational qualification and level of coping.**

(N=120)

Educational qualification of nurse	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
GNM (N)	28	23.5	17	14.1	8	6.6	<b>12.8*</b>
BSc (N)	39	32.5	13	10.8	6	5	
MSc (N)	1	0.83	7	5.83	1	0.84	

\* P value &lt;0.012

The data presented in the table 19 shows that computed chi-square value for educational qualification was 12.8, which indicate that there is a significant association between level of coping and educational status\*P value <0.05.

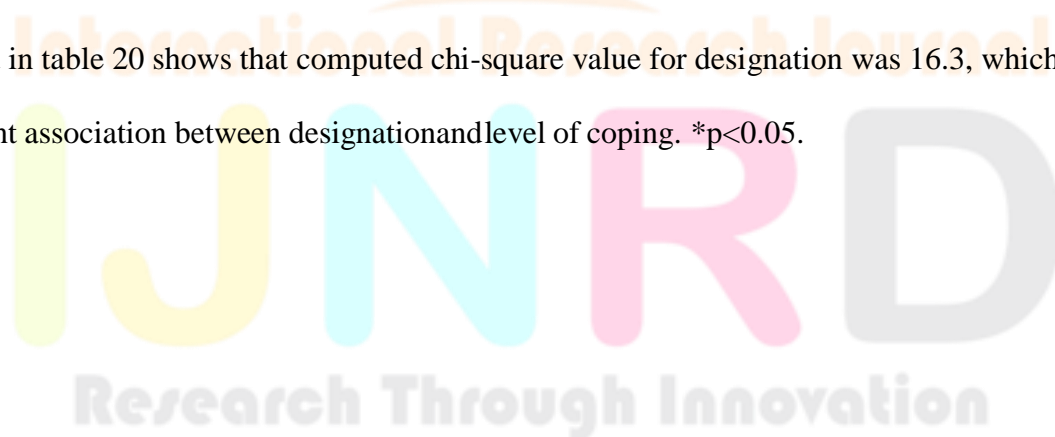
**Table 20: Association between designation and level of coping.**

(N=120)

Designation of nurses	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Intern staff Nurse /trainee	6	5	7	5.8	1	.95	
Junior staff nurse	29	24.1	11	9.19	12	10	<b>16.3*</b>
Senior staff nurse	28	23.3	19	15.8	2	1.6	
Head nurse	5	4.26	0	0	0	0	

**\*P value =0.012**

The data presented in table 20 shows that computed chi-square value for designation was 16.3, which indicate that there is a significant association between designation and level of coping. \*p<0.05.



**Table 21: Association between accommodation status and level of coping.**

(N=120)

Accommodation	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Hostel	2	1.7	1	.8	1	.9	<b>.593</b>
Home	66	55	36	30	14	11.6	NS

NS =Not Significant

The data presented in table 21 shows that computed chi-square value for accommodation status was 595 which indicate that there is no significant association between level of coping and accommodation status.



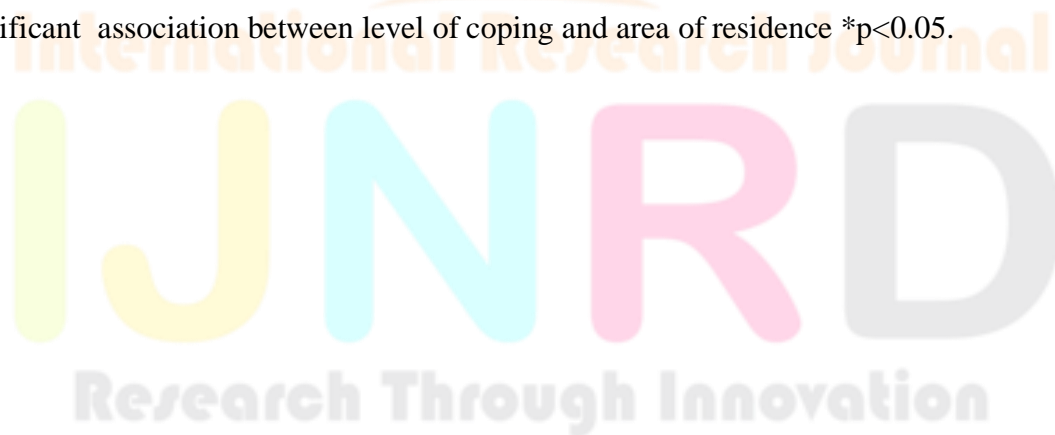
**Table 22: Association between Area of residence and level of coping.**

(N=120)

Area of residence	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
Urban	27	22.5	14	11.6	2	1.6	<b>11.2*</b>
Semi urban	22	18.3	15	12.5	3	2.7	NS
Rural	19	15.8	8	6.7	10	8.3	

**\*P value =.023**

The data presented in table 22 shows that computed chi-square value for area of residence was 11.2, which indicate that there is a significant association between level of coping and area of residence \*p<0.05.



**Table 23: Association between Area of work and level of coping.**

(N=120)

Area of work	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	f	%	f	%	
medical ward	13	10.8	3	2.5	4	3.3	11.5 NS
medical care unit	6	5	6	5	1	.9	
emergency unit	16	13.3	15	12.5	6	5	
coronary care unit	20	16.6	10	8.5	4	3.3	
neuro medical unit	13	10.8	3	2.5	0	0	

NS = Not Significant

The table 23 shows that the computed chi-square value for area of work was 11.5, which indicate that there is no significant association between area of work and level of coping.

**Table 24: Association between work experience and level of coping.**

(N=120)

work experience	Level of coping						$\chi^2$
	Good		Average		Poor		
	f	%	F	%	f	%	
below 1year	2	1.6	0	0	0	0	
1 -2 years	2	1.6	1	.83	0	0	
2 years and	5	4.16	7	5.8	3	2.5	4.7
4 years							NS
4 years andAbove	32	26.6	57	47.5	11	9.16	

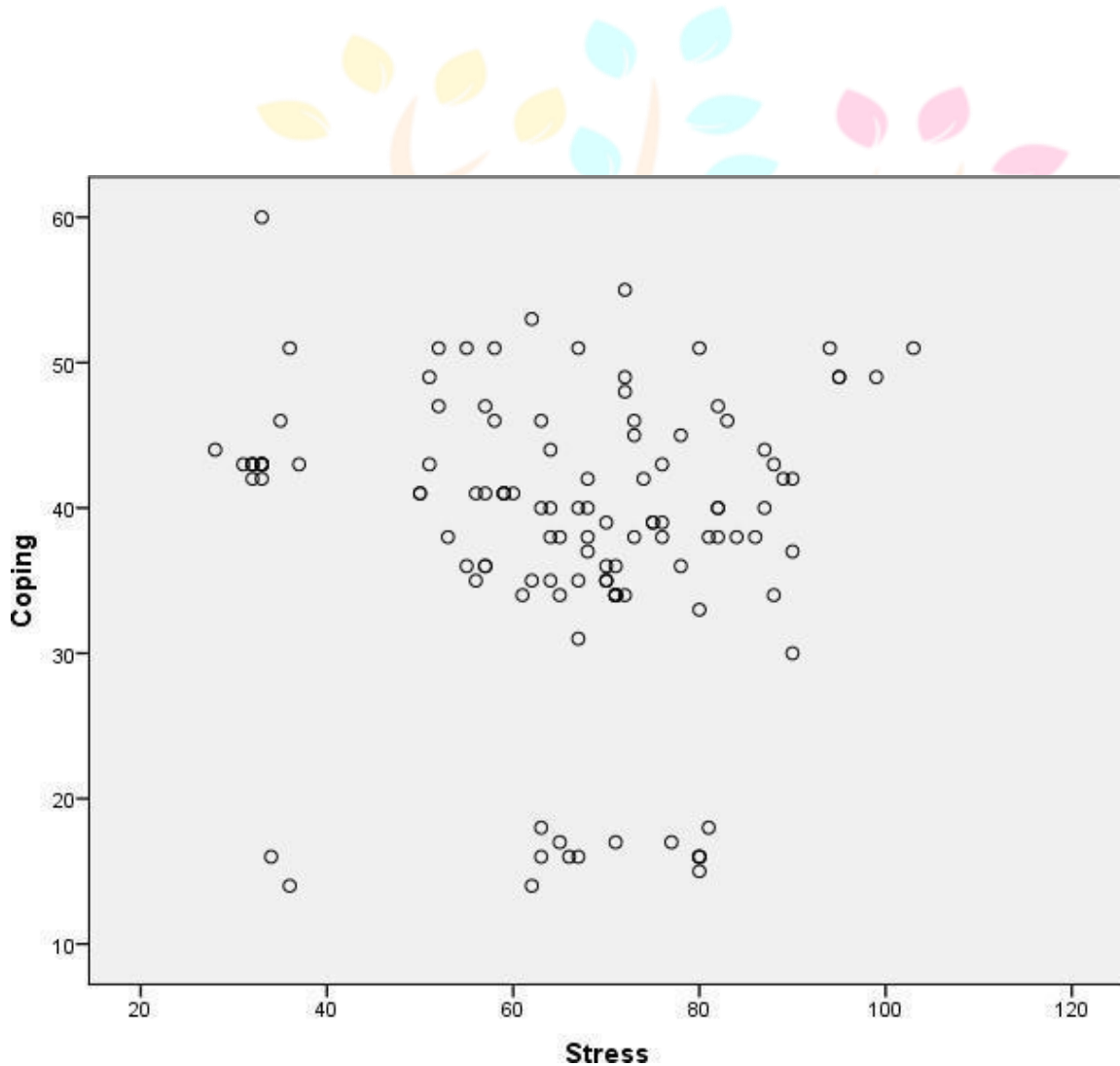
NS =Not Significant

The data presented in table 24 shows that computed chi-square value for area of work 4.7 which is statistically not have association between level of coping and workexperience.

## Section VI : Correlation between stress and coping experienced by the nurses.

This section deals with the correlation between stress and coping experienced by nurses during Covid 19 pandemic.

Spearman's correlation coefficient is used to assess the correlation between stress and coping and the value obtained was -0.099 which is negative correlation and it indicate that as level of coping increases stress level of nurses decreases.



## SUMMARY

This chapter deals with the analysis and interpretation of level of stress and coping of nurses with the baseline variables. Keeping in view the objective of the study, descriptive and inferential statistics were used. so, study concludes that there is a significant association between stress with selected baseline variables like gender, having children, family income, designation and area of work and there is a significant association between coping and selected baseline variables like age, having children, educational status, designation and area of residence.



## RESULTS

This chapter presents the major results of the study :-

### Objectives

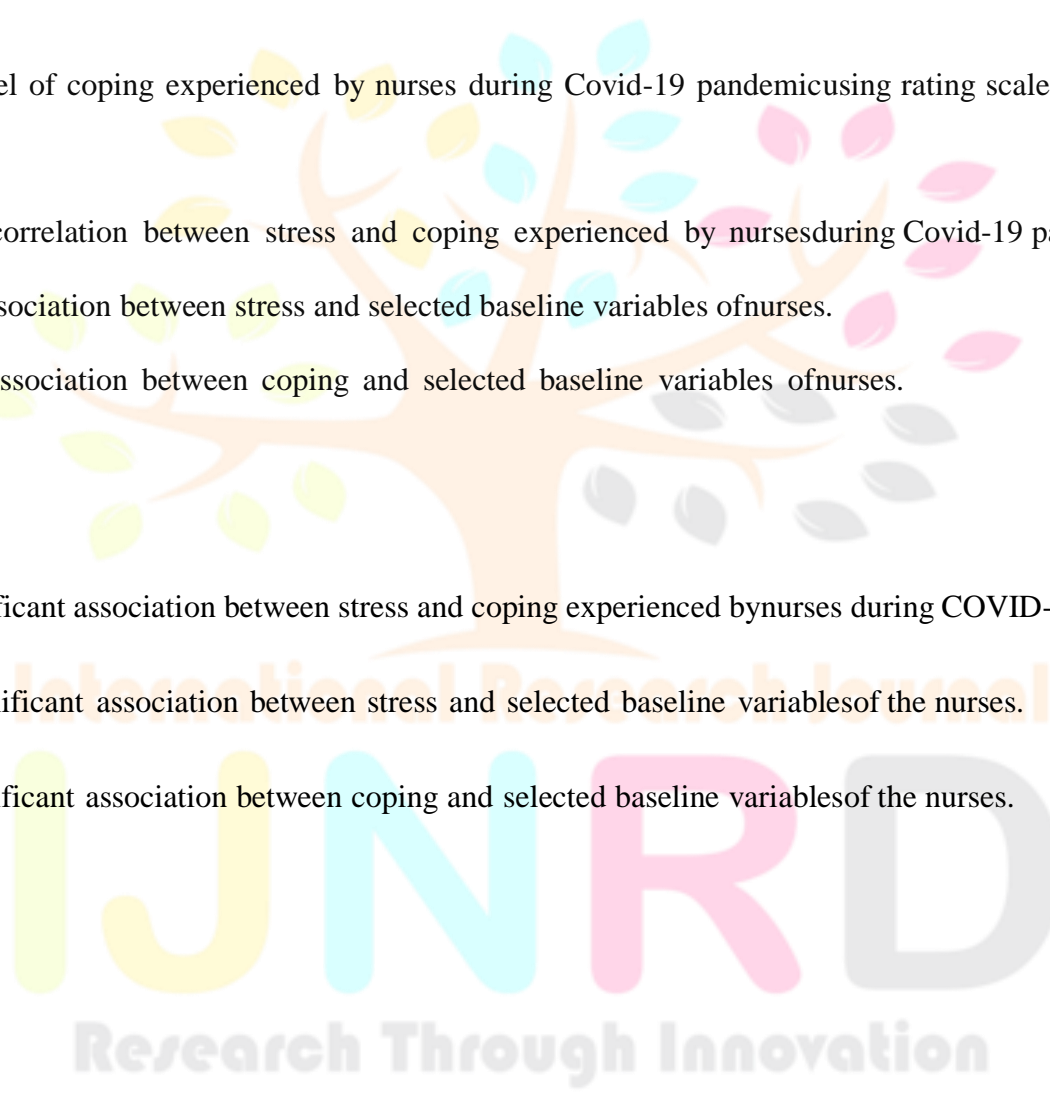
1. Assess the level of stress experienced by nurses during Covid-19 pandemic using rating Scale to assess the stress.
2. Assess the level of coping experienced by nurses during Covid-19 pandemic using rating scale to assess the coping.
3. Find out the correlation between stress and coping experienced by nurses during Covid-19 pandemic.
4. Find out the association between stress and selected baseline variables of nurses.
5. Find out the association between coping and selected baseline variables of nurses.

### HYPOTHESES

H<sub>1</sub> - There is significant association between stress and coping experienced by nurses during COVID-19 pandemic.

H<sub>2</sub> – There is significant association between stress and selected baseline variables of the nurses.

H<sub>3</sub> – There is significant association between coping and selected baseline variables of the nurses.





## Results

Results of the present study are discussed under the following headings.

**Section I** : Description of baseline proforma.

**Section II** : Description of level of stress experienced by nurses. **Section III** : Description of level of coping experienced by nurses. **Section IV** : Association between level of stress and baseline variables.

**Section V** : Association between level of coping and baseline variables.

**Section VI** : Correlation between stress and coping experienced by the nurses.



### **Section I: Distribution of nurses according to baseline variables.**

Based on age, majority of the nurses 44.2% belong to the age group of 31-35years, 31.7% of the nurses belong to the age group of 26-30years, 19.2% of the nurses belong to the age group of 36-40years, 3.3% of the nurses belongs to the age group of 21-25years and only 1.6% belongs to the age group above 40 years.

Based on gender, majority of the nurses, 95% were females and 5% nursesweremales.

In the present study, majority of nurses 89.2% were married and 10.8% wereunmarried

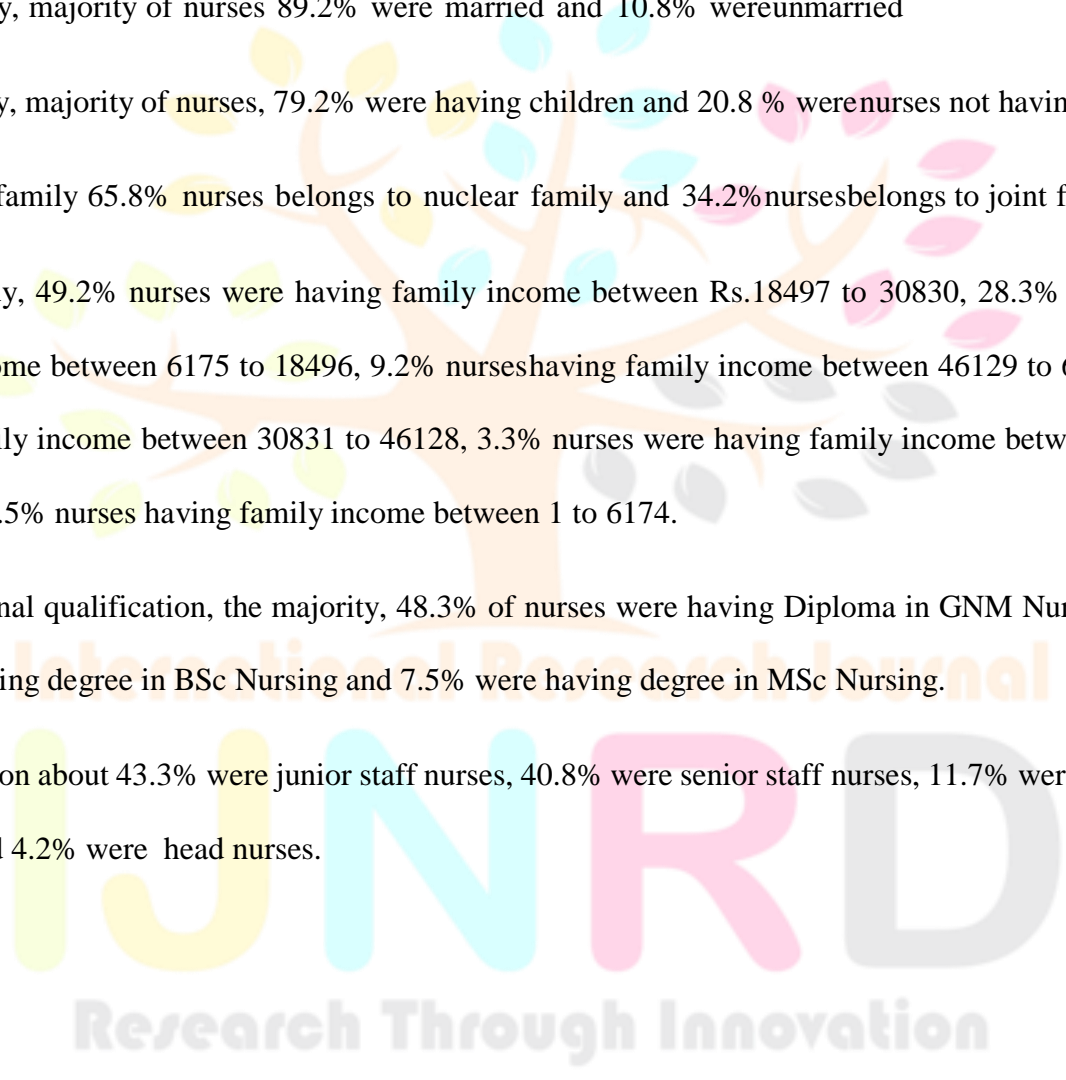
In the present study, majority of nurses, 79.2% were having children and 20.8 % werenurses not having children.

Based on type of family 65.8% nurses belongs to nuclear family and 34.2%nursesbelongs to joint family.

In the present study, 49.2% nurses were having family income between Rs.18497 to 30830, 28.3% nurses were having family income between 6175 to 18496, 9.2% nurseshaving family income between 46129 to 61662, 7.5% nurses having family income between 30831 to 46128, 3.3% nurses were having family income between 61663to 123321 and only 2.5% nurses having family income between 1 to 6174.

Based on educational qualification, the majority, 48.3% of nurses were having Diploma in GNM Nursing, 44.2% of nurses were having degree in BSc Nursing and 7.5% were having degree in MSc Nursing.

Based on designation about 43.3% were junior staff nurses, 40.8% were senior staff nurses, 11.7% were intern staff nurses/trainees and 4.2% were head nurses.



Based on accommodation status, majority 96.7% nurses were staying in home and only 3.3% were staying in hostel.

Based on area of residence, 35.8% nurses were from urban area, 33.4% nurses from semi urban area and 30.8% were from rural area.

In the present study, 30.8% nurses were working in coronary care unit, 28.3% nurses were working in emergency care unit, 16.7% nurses were working in medical wards, 13.4% nurses were working in neuro medical ICU and 10.8% were working in Medical ICU.

Based on working experience, majority 83.3% nurses having working experience of 4 years and above, 12.5% nurses having working experience of 2 years to 4 years, 2.5% nurses having working experience of 1 to 2 years and only 1.7% of nurses having experience of below 1 year.

## **Section II: Distribution of nurses according to level of stress experienced.**

The study reveals that majority of nurses, 45% experienced moderate stress, about 42.5% nurses experienced severe stress and 12.5% nurses were experienced mild stress.

## **Section III: Distribution of nurses according to level of coping experienced.**

The study reveals that majority, 56.7% of nurses experienced average coping, about 30.8% of nurses experienced good coping and 12.5% of nurses having poor coping.

## **Section IV: Association between baseline variables and level of stress.**

In order to find the association between baseline variables and level of stress, chi-square test was computed.

In this study, the computed value of chi-square shows that there is a significant association found between stress with selected baseline variables like gender, having children, family income, designation and area of work. There was no significant association between age and level of stress. There is no significant association found between stress and selected baseline variables like age, marital status, type of family, educational status, area of residence, working experience.

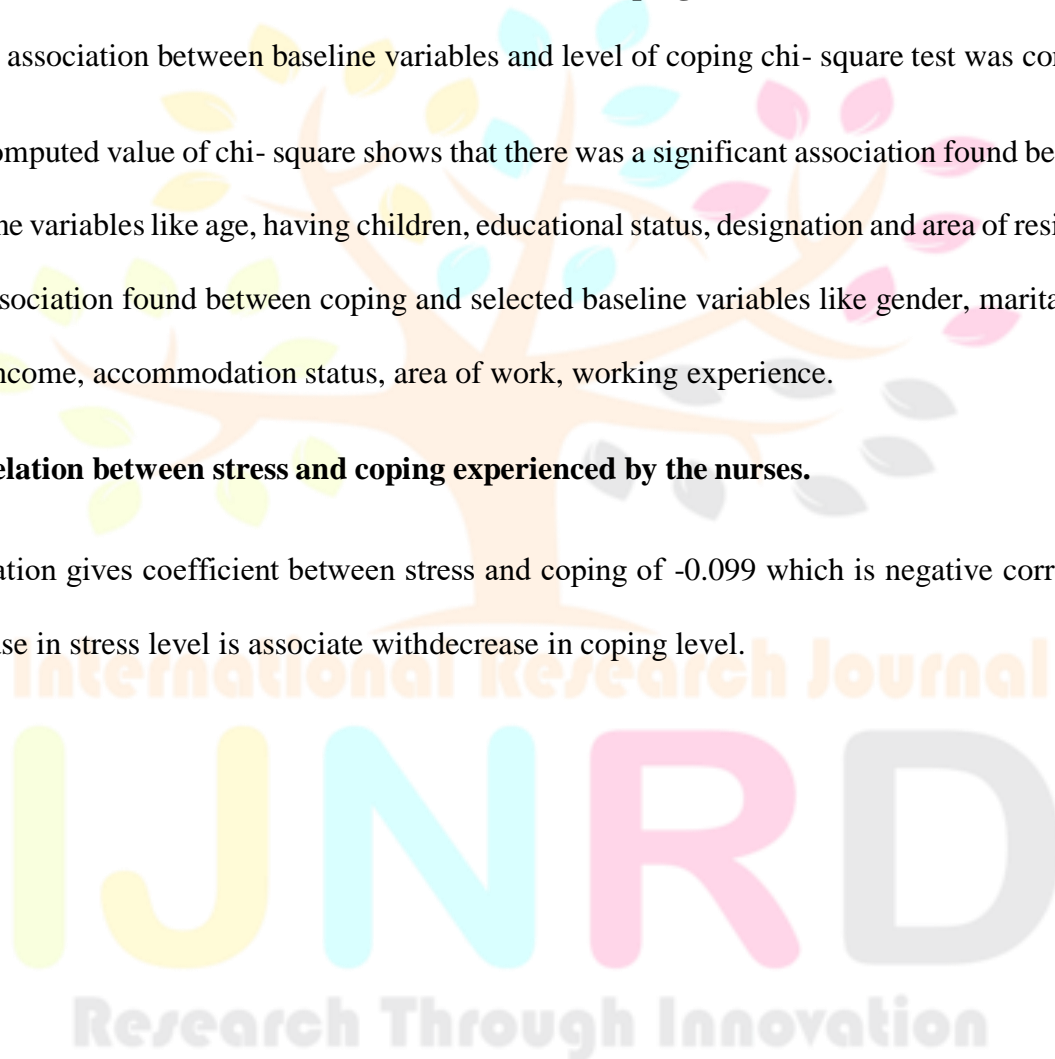
#### **Section V: Association between baseline variables and level of coping.**

In order to find the association between baseline variables and level of coping chi- square test was computed.

In this study, the computed value of chi- square shows that there was a significant association found between coping and selected baseline variables like age, having children, educational status, designation and area of residence. There is no significant association found between coping and selected baseline variables like gender, marital status, type of family, family income, accommodation status, area of work, working experience.

#### **Section VI: Correlation between stress and coping experienced by the nurses.**

Spearman's correlation gives coefficient between stress and coping of -0.099 which is negative correlation and it indicate that increase in stress level is associate with decrease in coping level.



## DISCUSSION, SUMMARY AND CONCLUSION

This chapter gives a brief account of major findings of present study and discussion in relation to similar studies conducted by other researchers. It further includes summary, conclusion, nursing implication, limitation of the study and recommendation.

### Discussion

Discussion refers to the findings of the study or how it differs from previous literature.<sup>29</sup> The study was intended to assess the stress and coping among nurses during Covid – 19 pandemic.

The results of the study have been discussed under the following sections:

Section 1 : Discussion about baseline variables.

Section 2 : Discussion about level of stress of nurses Section 3: Discussion about level of coping of nurses

Section 4 : Discussion about the association between the selected baseline variables and stress.

Section 5 : Discussion about the association between the selected baseline variables and coping.

#### Section 1: Discussion about baseline variables.

The baseline variables selected for the present study were age, gender, marital status, having children, types of family, family income, educational qualification, job description, accommodation status, area of residence, area of work and work experience.

## Age

Majority of the nurses, 44.2% belong to the age group of 31-35years, 31.7% of the nurses belong to the age group of 26-30years, 19.2% of the nurses belong to the age group of 36-40years, 3.3% of the nurses belongs to the age group of 21-25years and only 1.6% of the nurses belongs to the age group of above 40 years.

## Gender

Majority of the nurses, 95% were females and 5% nurses were males.

## Marital status

Majority of nurses, 89.2% were married and 10.8% were unmarried.

## Having children

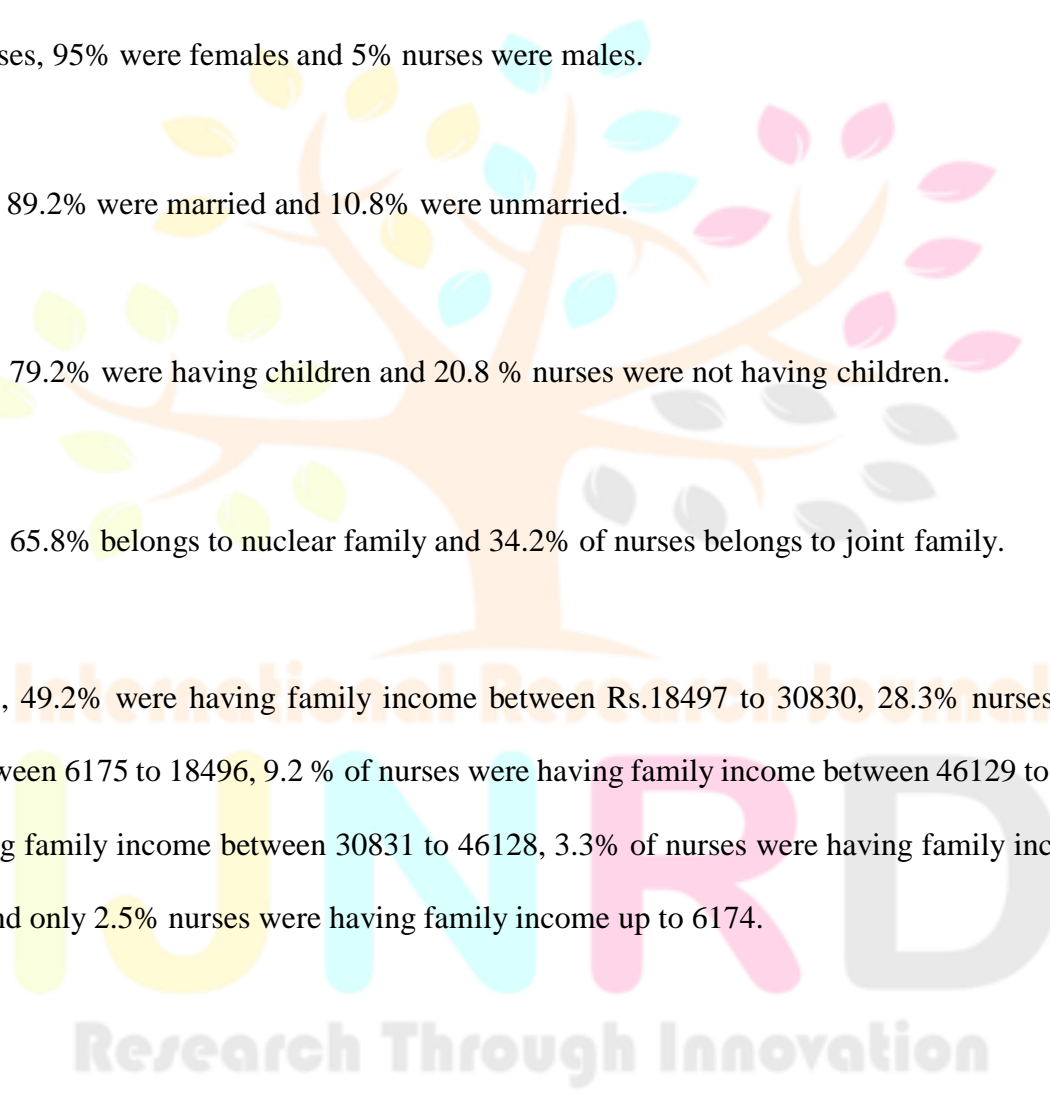
Majority of nurses, 79.2% were having children and 20.8 % nurses were not having children.

## Types of family

Majority of nurses, 65.8% belongs to nuclear family and 34.2% of nurses belongs to joint family.

## Family income

Majority of nurses, 49.2% were having family income between Rs.18497 to 30830, 28.3% nurses were having family income between 6175 to 18496, 9.2 % of nurses were having family income between 46129 to 61662, 7.5% nurses were having family income between 30831 to 46128, 3.3% of nurses were having family income between 61663to 123321 and only 2.5% nurses were having family income up to 6174.



### **Educational status**

Majority of nurses, 48.3% were under gone GNM Nursing, 44.2% of nurses were under gone B.Sc. Nursing and 7.5% of nurses were undergone M.Sc. Nursing programme.

### **Designation**

Majority of nurses, 43.3% were junior staff nurses, 40.8% were senior staff nurses, 11.7% were intern staff nurses/trainee and 4.2% were head nurses.

### **Accommodation status**

Majority of nurses, 96.7% were staying in home and only 3.3% of nurses were staying in hostel.

### **Area of residence**

Majority of nurses, 35.8% were from urban area, 33.4% nurses from semi urban area and 30.8% were from rural area.

### **Area of work**

Majority of nurses, 30.8% were working in coronary care unit, 28.3% nurses were working in emergency care unit, 16.7% nurses were working in medical wards, 13.4% nurses were working in neuro medical ICU and 10.8% were working in medical ICU.

### **Work experience**

Majority of nurses, 83.3% were having working experience of 4 years and above, 12.5% of nurses were having working experience of 2 years to 4 years, 2.5% nurses were having working experience of 1 to 2 years and only 1.7% of nurses having experience of below 1 year.



**Section 2: Discussion about level of stress of nurses**

The study revealed that the majority of nurses, 45% experienced moderate stress, about 42.5% of nurses experienced severe stress and 12.5 % nurses were experienced mild stress.

**Section 3: Discussion about the level of coping of nurses**

The study revealed that majority of nurses, 56.7% experienced average coping, about 30.8% of nurses experienced good coping and 12.5% of nurses experienced poor coping.

**Section 4: Discussion about the association between the selected baselinevariables and stress.**

The present study used chi-square test to find out the association between selected baseline variables and stress. Significant association found between stress and selected baseline variables like gender, having children, family income, designation and area of work. There was no significant association between age, marital status, type of family, educational status, designation, accommodation status, area of residence and work experience.

**Section 5: Discussion about the association between the selected baselinevariables and coping.**

The present study used chi-square test to find out the association between selected baseline variables and coping. Significant association found between coping and selected baseline variables like age, having children, educational status, designation and area of residence. There was no significant association between gender, marital status, type of family, family income, educational status, designation, accommodation

status, area of residence, area of work and work experience.

## Summary

The present study was done to assess the stress and coping experienced by nurses during Covid-19 pandemic in the selected hospital, Pathanamthitta district with a view to prepare an Information booklet. The objective of the study were to assess the level of stress, level of coping, find out the correlation between stress and coping, find out the association between stress and selected baseline variables of nurses and to find out the association between coping and selected baseline variables of nurses. The review of literature were taken from books, journals, unpublished dissertations, thesis, books and web sources. In order to achieve the objectives of the study, quantitative research approach with descriptive study design was adopted. The tool consist of baseline assessment proforma and rating scales to assess the stress and coping of nurses. The validity and reliability of the tools were tested and found reliable. Pilot study was conducted among 12 nurses during the month of January 2022 to determine the feasibility of the study. Convenience sampling technique was used for sample selection. Pilot study revealed that the objectives of the study could be fulfilled. Based on the information the investigator proceeded with the final study. The main study was conducted in the selected hospital, Pathanamthitta district. Data collection was done during the period of 17.01.2022 to 05.02.2022. The nurses satisfying the inclusion and exclusion criteria were selected by using convenience sampling technique. The study was conducted among 120 nurses from who were working in the Medical wards, Medical ICU, Neuro medical ICU, Coronary care unit and Emergency care unit of the selected hospital. The researcher introduced herself with nurses and explained the purpose of study, confidentiality was assured to all nurses. An informed

written consent was taken prior to data collection. Data was collected using baseline assessment proforma and rating scales to assess the stress and coping. Data was systematically tabulated to facilitate data analysis.

Frequency and percentage distribution were used to analyze the baseline proforma and level of stress and coping. Spearman correlation was used to assess the correlation of stress and coping. Chi-square test was used to find out the association between stress and coping with baseline variables of samples.

The study findings revealed significant association between stress and selected baseline variables gender, having children, family income, designation and area of work and significant association between coping and selected baseline variables like age, having children, educational status, designation and area of residence.

### **Conclusion**

Stress is unavoidable in nursing, so managing it is critical. High stress levels and related mental health conditions can threaten the well-being of nurses and their patients. Psychological distress increases the likelihood of medical mistakes and contributes to staff burnout and retention challenges.<sup>23</sup>

The Covid-19 pandemic has highlighted the physical dangers that nurses and other healthcare providers expose themselves to when providing life-saving care. If stress is left untreated, it can lead to physical ailments including high blood pressure or insomnia and mental health conditions such as depression or anxiety. Fortunately, there are a number of ways that nurses can manage stress to improve their overall health and maintain vitality in their roles. Nurse leaders and educators can also play a role in reducing stress among nurses.<sup>17</sup>

For nurses, negative emotions such as fear, anxiety, or frustration are often concealed in order to project the compassion, confidence, and professionalism necessary to perform their jobs. Such dissonance between inner feelings and outer appearances can contribute significantly to mental fatigue and stress.

The present study was aimed to assess the stress and coping of nurses during Covid 19 pandemic.

The study revealed that majority of nurses, 45% experienced moderate stress, about 42.5% nurses experienced severe stress and 12.5 % nurses were experienced mild stress. It also revealed that majority of nurses, 56.7% experienced average coping, about 30.8% of nurses experienced good coping and 12.5% of nurses experienced poor coping.

Nurses who learn to successfully manage stress are more likely to experience the rewards of their work, including the perspective that comes from helping others during times of crisis. Many find that their work teaches them a greater tolerance for others, helps them experience more gratitude and spiritual connection, and makes them appreciate loved ones even more.

### **Nursing implications**

The findings of the study have implications in the field of nursing practice, nursing education, nursing administration and nursing research. The nurse as a professional health care practitioner can make a significant contribution in providing interventions that help to understand the importance of stress management and various coping strategies.

### **Nursing Service**

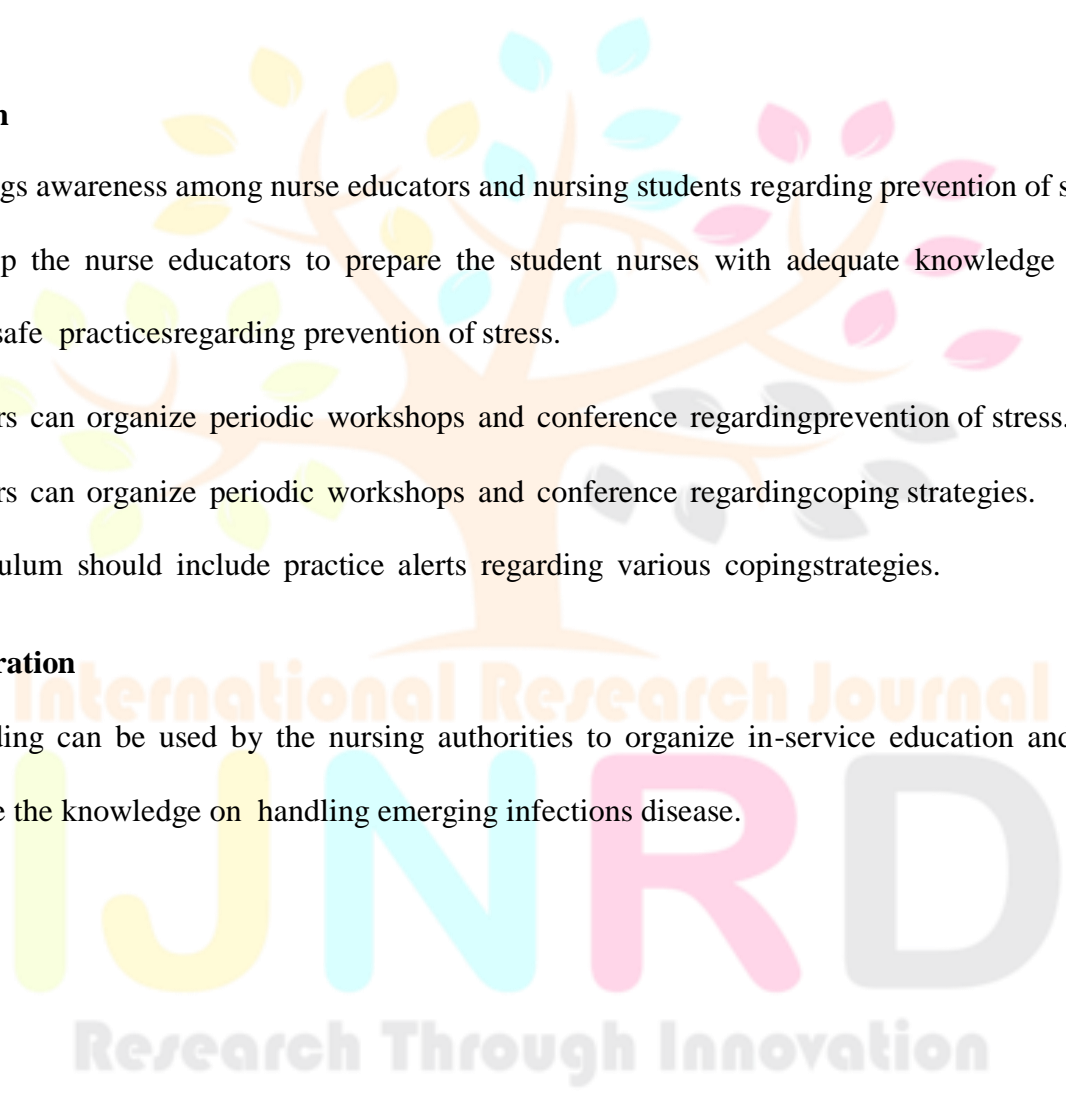
1. The study sensitizes the nurses to promote awareness above various stressors in working environment.
2. The study emphasis the need for the nurses to identify various stressors and its coping strategies.
3. The study emphasizes the importance of providing in- service education regarding various stressors and coping strategies among nursing professionals.
4. Protocols should be developed and implemented in health care institutions regarding prevention of mental trauma in nursing.

### **Nursing education**

1. This study brings awareness among nurse educators and nursing students regarding prevention of stress.
2. This study help the nurse educators to prepare the student nurses with adequate knowledge and skill in implementing the safe practices regarding prevention of stress.
3. Nurse educators can organize periodic workshops and conference regarding prevention of stress.
4. Nurse educators can organize periodic workshops and conference regarding coping strategies.
5. Nursing curriculum should include practice alerts regarding various coping strategies.

### **Nursing administration**

1. The study finding can be used by the nursing authorities to organize in-service education and orientation programs to update the knowledge on handling emerging infections disease.



2. Nurse administrators can make policies and protocols for ensuring the safe working environment.
3. Nurse administrators can organize workshops and conference regarding safe infection control practices.
4. Nurse administrators can do periodic auditing and evaluation on work load of nurses.
5. Nurse administrators can monitor and supervise the duty scheduling of nurses.

### **Nursing research**

1. There is a need for extensive research in this area so that strategies for educating nurses regarding various management of work stress can be developed.
2. Investigators can use the methodology as reference material or it provides a venue for further studies in this area.

### **Limitation of the study**

1. The study was limited to nurses of Muthoot Hospital, Kozhencherry
2. The sample size was limited to 120 samples.
3. The duration of the study was from 17/01/2022 to 05/02/2022.
4. The study did not use control group and interventions.

### **Recommendations**

Based on the findings of the study following recommendations were made

1. A replication of present study can be conducted with a larger sample.
2. A similar study can be conducted in different personnels with different research design and methodology.
3. The study can be carried out among nursing students and other health professionals.



## SUMMARY

The present chapter dealt with the findings of the study related to demographic characteristics and the major implications of the nursing service related to nursing education, nursing practice, nursing administration and nursing research areas.

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